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THE ABILITY TO RESPOND TO TOXIC CHEMICAL EMERGENCIES

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THE ABILITY TO RESPOND TO TOXIC CHEMICAL EMERGENCIES

MONDAY, FEBRUARY 18, 1985

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Newark, NJ.

The committee met at 10:15 a.m., in the New Jersey Institute of Technology, Newark, NJ, Hon. Frank R. Lautenberg presiding.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. Good morning. We are going to call this hearing to order and start the program. I'm joined here at the table with supporting staff. On my right is Liz Barratt-Brown, who handles environmental issues for the Lautenberg Senate Office; Curtis Moore, who is the associate majority counsel of the Environment and Public Works Committee and Phil Cummings, who is the chief minority counsel with the same committee.

The purpose of this hearing is to ask some tough questions, questions about our ability to respond to sudden and deadly releases of toxic chemicals into our air and into our water; to respond to fires, fires caused when chemicals or gasses are released into the air and explode or ignite; to respond to the panic that sets in in a community when the first traces of a chemical release start affecting a neighborhood or even a city; to respond to the needs of our fire and police personnel, who are the first line of defense in toxic accidents, and to ask some tough questions about why these accidents occur and what we need to make sure that they don't recur.

Three months ago, Bhopal, India, was relatively unknown. Now it's known to people all over the world. It's a name that strikes fear in the hearts of millions who live or work near chemical plants. It's become a synonym for a chemical death wave.

December 3, 1984, a poisonous, gaseous cloud enveloped the town. It was so thick, workers couldn't see. Outside the plant, people were dying by the hundreds. Ultimately some 2,000 perished. One hundred and fifty thousand sustained frightening injuries.

The question is can it happen here? Newscasters, reporters, and citizens across this land ask that question now day after day. Unfortunately, we know it could. Less serious but dreadfully similar conditions provide us with a grim reminder of what could happen.

Texas City, TX, 1978, a sudden series of explosions at a refinery in the middle of the night. The sky lit up like daylight. Seven died. Pandemonium reigned in the streets.

Livingston, LA, 1982, 43 chemical cars derailed. Explosions and chemical contamination chased 2,700 people from their homes for weeks.

The Goethals Bridge, November 1984, workers suspended hundreds of feet above the Arthur Kill River were overcome by a vapor cloud. Six workmen and thirty passengers on the bridge required hospitalization.

Some days ago, I went door to door in Linden, NJ. After visiting residents living near chemical plants, I was shocked by how little they knew about what to do in the event of an accident. Not one person could tell me the difference between an emergency evacuation alert, an air raid system or the lunch whistle.

That's the system we are relying on in the United States to avert a Bhopal, a system where policemen and firemen are asked to respond to chemical disasters with their hands often tied behind their backs because they don't know what types of chemicals are on site at an installation; a system where a leading chemical manufacturer's own internal safety documents acknowledged that the firm's employees are the first line of defense, that it is alerted to chemical leaks within its plants by the physical reaction on the part of its workers.

Are we content to stay like canaries in a coal mine? In 1984, in America we were lucky. In 1985, can we depend on luck again to pull us through?

At this hearing, we are going to hear from citizens and affected communities, policemen, firemen, emergency response officials, industry representatives, and Federal and State officials charged with protecting the public's health. When we conclude our hearing, I intend to introduce legislation to fill the gaps in our laws and where necessary, to give tougher mandates to our agencies and to insist that the laws on the books be reinforced.

Today we want to flush out the essential elements of an effective emergency response. The minimum requirements of such a plan must include adequate safety precautions to prevent accidents from happening or if they do, from escalating; readily available information on the location of plants that handle toxic chemicals, the chemicals on site, how dangerous are they, the quantities, and the appropriate treatment for exposed citizens; immediate notification of the appropriate authorities, workers, and the surrounding community in the event of an accident; steep penalties for nonreporting of chemical releases; emergency preparedness planning that is shared with the community; and standard training for police, firefighters and other response officials.

We all have to work together, industries, community, local, State and Federal officials and, together, I believe that we can make our communities safer. What I have seen in my contact with all the interested parties, and I must say, industry coming forward, recognizing that they bear a very significant share of the responsibility and willing to face up to that responsibility, so I look forward to hearing from the witnesses today. We have a long agenda. We are going to try to limit the testimony and I ask each of the witnesses to cooperate to 10 minutes. That leaves us some time for questions.

We are very fortunate this morning to have with us someone who has a long and distinguished record of involvement with ques-

tions about the environment, pollution, concerns on how we protect the health of our citizens in this State and in this Nation and pleased to welcome Congressman James J. Florio from the First District of New Jersey. Welcome, Jim. We are anxious to hear your testimony and invite you to proceed.

STATEMENT OF HON. JAMES J. FLORIO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Congressman FLORIO. Thank you very much, Senator. Let me express my appreciation for the opportunity to come to deliver some observations on the questions that you are concerned about. I would also like to compliment you on your very competent staff that does such a fine job, as well as for your committee in the Senate. It has been my pleasure to work closely with them over the last number of years. I would ask my statement be put into the record in entirety and I will try to summarize so as to save the committee's time.

I think New Jersey residents particularly have become somewhat restless and fearful and frustrated over the deficiencies that we start to perceive are in existence in the system or the nonsystem that we have in this country for dealing with chemical substances and particularly the safety consequences of chemical substances. I will not go through a recitation of the problems we have had here in New Jersey, particularly in the Linden area in the last number of months. Suffice it to say that this problem reached a climax last week, as I'm sure most know, when we had an explosion in Middlesex County at a chemical facility.

I think one thing should be clear and that's that the problem that we have with regard to chemical releases, toxic releases, is not something that's particularly unique to New Jersey; that on a nationwide basis, we are starting to have serious questions as to the adequacy of our regulatory system, the adequacy of the state of our laws and even when we have laws, the adequacy of the enforcement of those laws.

There are many more releases that are taking place around the country than anyone in a position of accountability even knows anything about. Immediately following the tragedy in Bhopal, Congressman Henry Waxman, the chairman of the Health and Environment Subcommittee and I, as the chairman of the Commerce and Transportation Subcommittee, went to Institute, WV, and held congressional hearings. Institute, WV, is the site of the Union Carbide facility which is virtually a duplicate of the facility in Bhopal.

The results of that hearing, which are still unfolding, by the way, have deepened the concern of all knowledgeable observers and have really not arrested our concern about the potential for a disaster in the United States that is comparable to the Bhopal incident. Unless some immediate actions take place, I'm not in a position, and I suspect no one else is in a position, to give the American people the assurance that such an occurrence could not happen here in the United States.

The hearings in Institute and our subsequent investigation have revealed, for example, that the Union Carbide safety orders of the Institute facility conducted shortly before the Bhopal accident, that

is, before the Bhopal accident, found problems with machinery that were very similar to those that led to the tragedy in India. The companies assured us that it took immediate steps to rectify those problems. We have yet to obtain confirmation of its assurances from either the Federal or the State agencies. In sum, that says that there is some reason to believe that there was an awareness of difficulties in the facility that were not conveyed to the people in Bhopal.

Let me say as an aside that anything I say with regard to Union Carbide should be kept in mind, it should be kept in mind that Union Carbide is regarded as one of the most safety conscious companies in this Nation, which of course says a number of things. So I just want to convey to you that Union Carbide has the reputation for being one of the better chemical companies and I think that's important to note.

Testimony at our Institute hearing also revealed that there was no coherent evacuation plan for that community that effectively was able to be communicated to local residents. A very serious question has come to the fore as to whether there is even any requirement that a chemical facility have an evacuation plan.

I have given you my preliminary observation, my preliminary conclusion, that there is no requirement. So we are almost dependent upon the good citizen corporate reputation of a company to determine whether they want to take on their own the responsibility to have such a plan.

That hopefully will be changed by some legislation that we are talking about implementing in this session of the Congress.

Apart from the chilling possibility of a sudden explosion and release of large quantities of deadly gasses from facilities like the one in Institute or Bhopal, we received corporate records from Union Carbide indicating that on an average day, about 12 pounds of deadly methyl isocyanate, which is the contaminant that killed the people in India, are released into the air each hour. This opens a whole new area for concern. We focused, and perhaps legitimately, on explosions, we focused on accidents.

Maybe there is a need to start focusing on the routine venting procedures that are part of the chemical companies' production process which allows deadly contaminants to go into the air in an unregulated way. Each company makes the determination as to what it thinks is a safe level.

Because of some particularly unique features of West Virginia law, we know what it is that's vented into West Virginia air. We know that methyl isocyanate is vented out of that facility on an hourly basis in certain volumes. We know that phosgene is vented, consciously put into the air, and there doesn't appear to be any violation of the law. As a matter of fact, there isn't any requirement on a national basis that anyone even tell us what it is that's being put into the air out of these types of facilities.

Finally, our investigation uncovered an internal report prepared by the company concerning an accident involving the release of some 5 tons of highly dangerous phosgene into the air in August of 1980. This incident apparently was never reported to either State or Federal officials, so again, we have the absence of mandatory reporting requirements being an area that we should be looking into

if we are going to be providing for some national uniform standards.

What the findings of our national institute reveal, then, is New Jersey's problems with chemical safety are not isolated to New Jersey, not restricted to New Jersey, but rather they exist on a national level. I think the answers to these questions that I have raised that came out of this one hearing are extremely important and I think they involve the perception that we have a combination of failed government response, inadequate laws and failure to enforce the laws that we do have.

In 1970, for example, Congress enacted the hazardous air pollutants section of the Clean Air Act, section 112, if I recall, which gives the Environmental Protection Agency the authority to list and set emission standards for the types of hazardous waste that have been involved in some of the accidents we have incurred. These are hazardous air pollutants, by definition, life threatening pollutants. Fifteen years later, the agency has only managed to list seven substances as hazardous air pollutants, even though there are some 2,300 contaminants that fall under the Clean Air Act and other environmental pieces of legislation.

It's only recently that the action that we got out of EPA involves their announcement that they are not going to start regulating things like toluene, which is one of the substances released at the Middlesex fire.

In the face of regulatory paralysis at the Federal level, the States have been extremely slow to move in this vital area. New Jersey has managed to list and set emission standards for some 11 toxic air pollutants; that is, 7 out of the Federal leval, 11 out of the State level out of a universe of 2,300 known contaminants that potentially could be serious if people are exposed to them.

Incidentally, and this is an area that we have become involved in in great detail in the last couple of years in EPA in the course of our Clean Air Act deliberations, just to give you some sense of proportion, contaminants that are not regulated as life threatening by EPA or the states are things like dioxin, PCB's, phosgene, methyl isocyanate. Methyl isocyanate, that just got done killing 2,000 people, is not regarded as life threatening by EPA. One can see the frustration that people will experience if they try to make sense out of this system or nonsystem.

Until recently, the Federal Government also acted to regulate the safety of underground chemical storage facilities, which as I think we all know is a major deficiency in the law. You, Senator Lautenberg, and others in the Congress were very, very supportive and helpful in getting amendments to the Resource Conservation Recovery Act passed in the last session of the Congress, that the President signed sometime in November, if I recall.

Now EPA has the ability to start to draw regulations to insure some safety, although there have been some problems that EPA has brought to our attention with regard to air emissions. Part of the legislative package that I will make reference to is designed to deal with those inconsistencies in the interpretation of what that law meant. But it is also of some concern that the EPA has said that they will take the full 3 years to draw up these regulations and we were hopeful that they can do it sooner rather than later so

that we can provide some standards for underground storage tanks to the industry and to the American people.

There was also a concern that I have that I will not go into detail about concerning what I regard as a senseless turf war between OSHA and EPA. It is clear that when something happens at a factory, certainly workers are in jeopardy but as we have seen in Bhopal and we have seen in other areas, people in the outside area are also at risk.

So to have two agencies arguing with themselves as to who is to be the major actor makes no sense and in fact, is not in compliance with the law, particularly the TSCA law in 1976; that is, the Toxic Substances Control Act, which mandated these agencies and other agencies work in a coordinated way so as to deal with the environmental problems associated with the production of toxic substances.

Finally, in the area of emergency response and and evacuation plans, the primary Federal answers to such concerns has been the Superfund Program, which provides for regional emergency response teams to assist local authorities forced to cope with such disasters. Funds budgeted for the activities in 1985 total only $3.5 million, a woefully inadequate response or amont for that very important function, and when you have that small amount of money spread across the country, it is clear that you are not going to be able to do too much.

I'm hopeful that as we go forward in the Superfund deliberations this year, because I think all realize that on the first of October, that system self-destructs, that as we go forward with authorization, we will be able to focus on the emergency, regional emergency response team provision so as to be able to strengthen it and finance it in a more effective level.

I would just conclude by touching on the components of the package that I and Congressman Waxman have introduced that we hope will be dealt with this year in the Congress so as to fill in the obvious voids that exist in the law that even our preliminary hearings have brought to our attention. The package that has been introduced has about four or five key components. First we have initiated or the proposal would initiate a comprehensive national investigation of the scope and nature of the deliberate venting of toxic chemicals into the environment.

As part of this investigation, by the way, we have sent letters to major chemical companies in the country requesting emissions data on their chemical emission and venting process and we are hopeful that we can obtain that type of information in a cooperative way and I trust that the responsible members of the chemical industry will be cooperative. I have no reason to believe that they will not be.

In terms of the comprehensive package, as I said, the components are that we have the first comprehensive national community right to know legislation on a federal basis, which includes both notification requirements designed to fully inform communities about the potential chemical hazards in their midst and the mandatory development of emergency response and evacuation plans being provided for in the community right to know law. A key provision of these requirements is the mandatory filing of yearly emis-

sions reports on some 2,300 toxic and hazardous chemicals that are currently being produced at facilities around the Nation. The rationale, of course, is to have the community know what it is that's coming out of the facilities so that people can formulate appropriate active policies.

The legislation also contains reforms designed to plug loopholes in the major enviornmental programs which should prevent such dissatisfactions, including, as I said earlier, the regulation of leaking underground storage tanks and specific manufacturing processes which led to some of the worst recent incidents.

The legislation contains provisions designed to breathe life into the hazardous air pollutant requirements of the Clean Air Act. That is section 112, mandating action by EPA, and upon failure to take action, mandating automatic action, automatic listing of specifically some 37, 38 contaminants that EPA's cancer assessment group has already announced as being life threatening.

It also includes a provision designed to protect workers exposed to hazardous substances in factories by insuring that weak OSHA standards, that is, a weak right to know requirement that OSHA has put out, becomes the floor and not the ceiling for State efforts to safeguard workers' health. That is, if the federal government is going to put out regulations that some of us feel are inappropriately weak, that should not in any way preclude the right of the states to put stronger standards to protect workers into effect in the states. This will have the effect of overturning a recent unfortunate court decision that put into question the validity of New Jersey's right to know law.

The legislation would also establish a regional training program for firefighters and police who deal with train and truck wrecks which cause dangerous chemical spills and the legislation finally would create a Federal right to sue for victims of chemical disasters containing strong liability provisions and fair procedural rules.

This approach would be comparable to the existing law in Superfund which provides opportunities for EPA to seek reimbursement into the Superfund for payments that are made out of the Superfund pursuant to cleanup activities.

Senator Lautenberg, I'm pleased to be here. It goes without saying that I and my community stand ready at any time to be of full cooperation to your committee and of course, to the Senate, as we mutually go forward with the effort to be in a position to give the American people the assurance that there is some public accountability, there is some public interest standard that all who deal with toxics and hazardous materials are going to be required to adhere to and that most importantly, that when we pass regulations, when we pass laws, there are going to be public agencies that have some minimal involvement in protecting the environment by enforcing those laws.

Unfortunately, that has not been the case over the last number of years, that we can assure people that there is full, strong, and vigorous enforcement going on. So I appreciate the opportunity to be with you and obviously, I would be happy to try to respond to any questions.

Senator LAUTENBERG. Thank you, Congressman Florio, for your excellent testimony. As would have been expected, you moved

quickly and comprehensively to address a number of the questions. Obviously, our concerns have been precipitated by the tragic events of Bhopal, followed by the spate of incidents in New Jersey. You particularly have championed the cause of clean air, a clean environment, and needed response to these kinds of incidents.

We are lucky in New Jersey to have you as the chairman of the powerful House Environmental Subcommittee. You have planned your legislation to be fairly comprehensive and I share that perspective. I will introduce legislation in the Senate when we return to Washington and I look forward to working closely with you on moving this legislation through the Congress as well as getting a substantially expanded reauthorized Superfund in place before the program expires.

Thanks again for being here with us today. We will be asking many of the questions that you have raised of the witnesses that follow, including EPA, OSHA, and those from other agencies of Government.

Thanks very much.

Congressman FLORIO. Thank you.

Senator LAUTENBERG. Is Congressman Molinari here?

[No reponse.]

Senator LAUTENBERG. We are now going to call on the second panel: Mayor Hudak from Linden: Mr. James Butler, chairman of the fire safety committee, New Jersey Fireman's Mutual Benevolent Assocation; Mr. Richard Hills, who is in charge of the Middlesex County Air Pollution Control Program; and we have two citizens from Linden who are joining us today, Mrs. Keating and I'm told Mrs Keating is here with a baby. Where is the baby.

Mrs. KEATING. Outside.

Senator LAUTENBERG. I thought I heard—is it him or her?

Mrs. KEATING. Her.

Senator LAUTENBERG. And Mrs. Glamb, we are happy to have you with us. I wonder if we ought to maybe make a little bit of room, fill the empty seats so that we can include Mrs. Glamb.

We again welcome you all here. The testimony you are going to give today is very important in helping us shape programs, design legislation that's going to protect all of our citizens, and you are very nice to take the time to join us. We look forward to hearing from you. First I would like to call on Mayor Hudak from Linden. Mayor, we met before.

I take the liberty of reminding each of you that we would like to keep the testimony to 10 minutes. We will caution you at about the 8-minute mark. But please, Mayor, start.

STATEMENT OF HON. GEORGE HUDAK, MAYOR, CITY OF LINDEN, NJ

Mayor HUDAK. Thank you, Senator. I do appreciate the fact that I was invited here to appear at this hearing.

As the mayor of the city of Linden, I truly am concerned for the safety of our citizens. With the development of new chemicals and hazardous materials into the environment, the chances of an uncontrolled leak or spill increases every day.

However, I would like to dwell on one part of the letter that I received from your office about the response plans at facilities or chemical facilities within a community and I would like to just read a statement relative to that.

I have confidence in the ability of our emergency agencies to plan and to respond. The past performance of our emergency planning and reponse has been very positive. However, we didn't experience anything great yet as far as an emission goes, but it could have been positive and I hope our responses will continue to be so.

Emergency planning and response to hazardous situations, natural or manmade, which threatens the public health has been a continuing function of the office of emergency management in the city of Linden. We have a great deal of chemical operations within our borders and that's why we are concerned about the emergency response plans.

Over the past 3 years, plans which deal with the serious curtailment of water supply, evacuation procedures for convalescent home patients and crisis relocation have been developed. The community's emergency operating plan, including all the required departmental operating annexes, where revised just this past fall because of the incidents that have been occurring in the city of Linden.

Another major project was the completion of hazard analysis report which identified high risk hazard potential in our city of Linden. The analysis was used to structure a hazardous materials incident committee chaired by our committee chairman, John Borden, who is the coordinator of our office of emergency management committee, which has met regularly since mid-December, since these emissions have been occurring in our community, to formulate plans which will expand the focus on hazardous materials incidents. The plan as it is developing is concerned with A, reporting of an incident; B, responding to an incident and C, public warning and evacuation.

The planning is bringing together previous experience and planning with the most recent incidents of chemical spills. Previous planning defined three levels of emergencies and they are level 1, no movement of the population at all, a health alert with alert instrucitons through police public address mobile units. That was level one. Now we developed a level 2, which is the evacuation of a specific area, a health alert, again, and with police units involved with additional isolated siren blasts. That's the next level that we have in the alerting of our community. And level 3, total evacuation with sirens the warning mode.

A level one response has been initiated twice over the past 3 years in the city of Linden. Cooperation with the county emergency management officials is significant in our planning. Our local emergency management officials are in active participation with the county staff. Reporting procedures have been strengthened between the two agencies. Evacuation routes——

Senator LAUTENBERG. Mayor, excuse me. Would you just back up to your third point. The second point was the evacuation of a specific area and siren blasts.

Mayor HUDAK. All right. The police units were involved in isolated siren blasts and level 3 was the total evacuation with sirens the

warning mode for the entire area. That's what we have in place right now.

Senator LAUTENBERG. Thank you.

Mayor HUDAK. Reporting procedures have been strengthened between the county and the municipality. Evacuation routes and registration points are under review for inclusion. A speedy utilitization of county resources are being coordinated with the county emergency management officials. We work very closely with the county.

I would also like to dwell just a little on the local level, the Linden Fire Department, which is very instrumental in emission control management or crisis management incidents. The Linden Fire Department is a fully paid fire department. We have 132 men on board. The fire department has been designated as the lead local agency in handling a hazardous materials incident by the local emergency management coordinator, Mr. John Borden.

The fire department incident coordinator has to make and has been designated as the responsible person to make the initial sizeup upon arrival at a scene where it has occurred. He makes a determination as to the type of hazardous materials incident that is involved, such as vapor cloud or atmospheric discharge or perhaps even a fluid spill. He then notifies the fire department alarm bureau to notify the proper agencies such as the emergency management coordinator, Mr. John Borden in Linden, the Middlesex County Health Department, which is the air pollution control program which the city of Linden has contracted with the State of New Jersey on; they notify the Department of Environmental Protection representatives, the State police, which we work very closely with, and other agencies as necessary.

At this point, he directs the fire department personnel in the strategic setup and proper fire suppression techniques to protect the lives and minimize the hazard. During a hazardous materials incident, the fire department operates according to a standard operating procedure which they have been trained with. This procedure instructs them in, but not limited to, the proper protective gear such as turnout clothing, boots, helmets, self-contained breathing apparatus, et cetera, and the appropriate procedure for the specific type of hazardous materials incident which has occurred and also decontamination procedures.

Once the emergency management coordinator or the proper State authorities arrive at the scene, the incident commander updates them and turns control of the scene to them, whether it's the State or the county coordinator. The fire department incident commander then acts upon the advice and at the direction of the appropriate State authority.

We in the city of Linden, Senator, have lived with chemical operations in our community for the last 60 years. We have experienced some emissions in the relative past and going back many years. We try to prepare ourselves for any eventuality but Bhopal certainly has brought into light that things of great magnitude can happen even within the borders of the city of Linden. I believe that whatever we can do as a community with whatever resources we have, we are doing the best we can with what we have.

We are looking forward to something coming out of these hearings that will perhaps add, perhaps from the State and Federal level, some greater degree of emergency planning or advice or assistance in any shape that may come out of these hearings and I certainly would appreciate anything along those lines to help the citizens of our community and I appreciate the fact that you are holding these hearings and that you are cognizant that cities like Linden do, in fact, face problems.

Thank you.

Senator LAUTENBERG. Thank you very much, Mayor. The testimony is very interesting and I know that you are concerned for the citizens of your community and your community has a very good record of being on the alert and dealing with the problems. You have industry and residents side by side. The concerns of each are certainly manifest in the visit that I took last week. I would ask you please, Mayor, to remain seated, we will go on with the testimony of the other witnesses, and then return for questions. Mr. Hills, I would like you to respond.

STATEMENT OF RICHARD HILLS, PROGRAM COORDINATOR, MIDDLESEX COUNTY AIR POLLUTION CONTROL PROGRAM

Mr. HILLS. Thank you, Senator. I appreciate the opportunity to sit before the committee that will be reviewing the issues at hand, specifically with respect to emergencies and incidences such as vapor clouds and toxic plumes. We are basically a county air pollution and emergency response program working as agents for the DEP in the central Jersey area. Linden and Rahway currently have executed annual contracts with us since 1970 and we have been providing emergency service and air pollution control work to those towns since that time.

Beginning on October 6, 1984, and through to January 21, 1985, our program was responsible for responding to 15 incidences of significant impact upon people and/or the environment as a result of an unfortunate series of incidents that have occurred at industrial sites located in the bicounty area. It's our team that responds, again, in conjunction with the DEP, and the local officials on the scene, such as fire and police department personnel. It's our job, of course, to respond to the site, to assess exactly what we have at hand as far as the release goes, the type of cloud, the wind direction, et cetera.

We then, after the assessment is made, advise the officials on the scene as to the proper course of action to take, after determining what the type and impact of the incident is. The unfortunate consequence of the Linden and Rahway incidents were vapor clouds going over, Staten Island and as far southwest of us as Monmouth County. That's an area well over 20 miles from the point of origin.

So of course, what we have done is that we have asked the industries to expedite, after, they secure the inplant premises, a call to the response program as quickly as possible. Time is of the essence, obviously, and our concern is to get out to the scene, coordinate the activities and to take the appropriate courses of action.

We have been fortunate in many of these incidences that no one has been fatally injured. We have had a number of incidences,

however, where we have had anywhere from 3 people sent to hospitals to well over 100. Again, we are quite fortunate and I attribute this largely to the fact of the consciousness of the companies in reporting, for the most part, the problems, and the response by the governmental agencies that are delegated that authority to respond, assess and advise.

We in the country air pollution and emergency response programs cover 27 towns consisting of about 333 square miles. In that very small area, we have about 180 major sources, a large number of those handling chemicals. We have been involved in a number of new incidences with extensive types of releases, such as fires, and explosions, not to mention the vapor clouds.

We have implemented a program of registration so that we can get a handle on what these companies are producing in our area because we are the front line responders. We are the ones that are going to have to be out there 24 hours a day—day and night—to make the advisories to the governmental officials that are on the scene that must take the necessary course of action to protect the public. We are primarily charged with the protection of Air Quality, public health and welfare. The air monitoring that we do, the training that my people are currently undergoing arise from the fact that we are now the very first county in the State of New Jersey with all five environmental health programs certified by the State DEP.

Senator LAUTENBERG. What is the population, Mr. Hills, of the area that you are talking about? You said 350 square miles?

Mr. HILLS. Approximately 333 square miles and consisting of about 670,000 people. And that's quite an area to cover. Fortunately, in one respect, the preponderance of industry is located within an industrial corridor along the Arthur Kill and the turnpike. The access to those areas, is expedited by the fact that we have major roadways situated throughout the areas. The timeliness in the response to the incident is of essence, getting to the site in the shortest time, assessing what is happening, coordinating all the activities. There are responders that stand by at home awaiting word from the scene, specifically from the communications in our emergency response van. We initiate telephone calls to the respective authorities in the out of State areas to in form them of the states of the incident.

The Interstate Sanitation Commission is called, New Jersey DEP is called, local authorities are called, as much as possible communication of activities from the site are delegated outward as a result of our response to the incidents.

Communications, as I say, is quite important. Equipment, manpower, the things that we need to safeguard the public and to protect the environment, we are obviously undergoing a growing program. I think what we have here at this hearing is a forum, an opportunity to express the need for expansion of local emergency response and air pollution programs. We are the first line responders out there. We are the ones that cover a vast area. We need as much support in manpower and equipment as we can possibly get. We can do the job. All the resources that we need are out there. All of the basic emergency plans are now there. What we need is to coordinate those, pull them together and come up with one free

flowing communications and response program, with adequate equipment and personnel.

Thank you.

Senator LAUTENBERG. Thanks, Mr. Hills. Just a point of information. How big is the staff that you have to directly to supervise the work with?

Mr. HILLS. We currently cover 27 towns with approximately 7 field inspectors.

Senator LAUTENBERG. Twenty-seven towns, is that geographic area defined and housing, you say, about 600——

Mr. HILLS. 670,000 people, and again, the important aspect of this is that as agents of the DEP, it actually puts an extra field force in the central Jersey area for the DEP in their absence. We coordinate our activities with them as the need arises, as in the type of releases that we have had over the past several months.

Senator LAUTENBERG. Thank you. If you will stay, we will get back to you in just a minute.

Mr. Butler, we would like to hear from you.

STATEMENT OF JAMES H. BUTLER, REPRESENTING THE NEW JERSEY STATE FIREMEN'S MUTUAL BENEVOLENT ASSOCIATION

Mr. BUTLER. Thank you, sir. My name is James Butler. I'm representing the New Jersey Firemen's Mutual Benevolent Association. I am chairman of the State FMBA safety and health committee and I'm also a line fire fighter with the city of Newark for 23 years in service.

The FMBA is a union of career firemen and fire officers representing over 5,500 men in 72 locals throughout the State. The serious concerns of all firefighters in New Jersey, both career and volunteer, is what brings me before this hearing today.

In 1983, Governor Kean signed into law the New Jersey right to know legislation and this became a great asset to the firemen for the reason that all manufacturers and users of chemicals listed in the law had to divulge the names and amounts of chemicals made or used by them to, among other agencies, the local fire departments. This enabled the firemen to know exactly what they would encounter at any given location. A Federal judge heard an appeal from the chemical association in New Jersey and he ruled that any company coming under the SIC code numbers 20 through 39 did not have to comply with the right to know regulations of New Jersey.

Just very briefly, among that group of manufacturing 20 to 39 code would be your chemical and allied products, your petroleum refining and related industries, just two that I may point out that present a very serious hazard to the health, safety and life of the firefighters.

In coding listing, it indicates that total amount of exempt firms and they are the ones who pose the greatest danger and hazard to the fire service. As a result of the trial and hearing, it is our feeling that big business has won out again over the working man and in this particular case, the emergency response personnel.

I must add, however, through, that there are a few firms that have excellent relationships with their local fire departments but

without a law to insure that this relationship takes place, many firms do not inform the local fire departments as to what they may encounter at any given time or location. This points out the need for Federal regulations because it appears that big business in this field will win constantly over State and local regulations.

There are three topics of concern to the firefighters I would really wish to outline today. But I would like to add right at the beginning that as a Federal hearing, this problem will not only face the firefighters of New Jersey, but it will face the firefighters across the country.

The first topic would be the personal protective clothing and necessary chemical equipment for firefighters. Proper personal protective clothing needed for chemical incidents in most municipalities in New Jersey today is at best minimal and in many cases, nonexistent. There are several fire-related organizations that have promulgated basic standards for the necessary personal protective clothing, but again, this equipment is very expensive.

Many municipalities cannot afford the cost of this equipment to outfit the necessary number of firemen that should be protected. The need and necessity for proper protective equipment is a must today for the safety and efficient operation during any chemical incident. Just having three or four or six men trained in a municipality for a chemical incident is not considered enough by our State association.

Senator LAUTENBERG. Tell me, Jim, you said that in some communities, they can't affort the proper equipment. Are the firefighters asked to go out and do this job knowing in advance that the equipment is inadequate for the job?

Mr. BUTLER. Yes, sir, in cases, they are. There are situations where as Mayor Hudak pointed out, the turnout gear firemen wear today is just a helmet, turnout coat and pants and boots. They are many times not sufficient protection to fully insure your safety in chemical incidents. Chemical suits, which are fully encapsulated units, such as Project Fire's Federal Government operations is working on, are the things necessary to fully insure the safety of the firefighter today. But again, the great cost of these units prohibits many towns from getting enough of them.

Senator LAUTENBERG. But the job is there to be done regardless, right?

Mr. BUTLER. Yes, sir.

Senator LAUTENBERG. Please continue.

Mr. BUTLER. We won't stand by and let something burn.

Senator LAUTENBERG. Thank you.

Mr. BUTLER. Dealing with the equipment, hazardous material response kits which are available for dealing with emergencies, these specialty kits are designed to enable the firemen to contain certain leaks or splits in chemcial vessels, but it is doubtful that many fire departments have these kits, again due to the cost of the unit and the budget restrictions. Also available are various types of either air or liquid sampling devices.

But again, quite often most fire departments have to wait until either the Department of Environmental Protection or the Department of Health personnel arrive at the scene because quite often, they are the only ones who have it. Being unable to spend the time

or money to be able to train fire service personnel and quite often, a lack of fire service personnel to be able to be sprung free for this certain position are the causes for this problem.

The training for hazardous and chemical material incidents for the firefighter, specialized training for chemical incidents in the form of fire, leak, spill, or explosion is minimal for most fire departments in New Jersey. This type of training, to be done correctly, requires many hours of both classroom instruction and hands on training given by qualified instructors who themselves must spend a great deal of time in order to fully know the entire scope of what they have to teach. Many departments have instructors who give classes while reading from instruction manuals but who themselves have not undergone the desired intensive training to teach this subject, which in many cases could be a life or death situation for the firefighter.

Granted there are a few departments in the State that will train a small number of their personnel in chemical hazards but all members of every department are not trained in such a way that they could effectively operate at a serious chemical incident in a knowledgeable and safe manner.

A fire safety commission has been established in New Jersey which has the task, among others, of formulating a standard method of training for all firefighters, both career and volunteer. This task will undoubtedly take a long time before it becomes reality. Training the firefighter in a partial manner is not desirable and will not even be justified to have him operate at an incident and be able to assist in the control of it while enabling him to protect himself from the dangers that he should recognize may happen if he were properly trained.

The firefighter may be able to carry out operations under direct orders and supervision, but we again feel that there are not enough of the trained supervisors or people out there to give them these direct orders. The State Firemen's Benevolent Association concludes that the training given to the rank and file firefighters of New Jersey in chemical incidents is not adequate for the situations they encounter in their firefighting duties.

The last topic that I wish to cover are the medical problems, the medical aspects of a hazardous or chemical material incident. Many injuries and illnesses, some of them minor, some very serious and probably many more unknown or undetected as of now, face all of firefighters each and every time we respond to a hazardous material or chemical incident. There are cases of firefighters who have worked at the chemical control fire in Elizabeth in 1980 and who have now in the last 12 months been diagnosed as having serious medical problems which are positively associated with chemical exposure.

Did, in fact, these illnesses come from this scene? There is one firefighter who is suffering from liver, spleen, and lung damage and his physician, after numerous tests, has medically associated these problems with exposure to various chemical fumes and particulates. A second firefighter suffers from a chemical reaction which causes his hands and fingers to crack open and bleed. He, too, has medical assurance that contact with chemicals caused his injury. This firefighter reports to our association that he must

wear white cotton gloves 24 hours a day in order to keep his hands medicated and free of infection.

Another point to bring out is the fact that New Jersey, unlike many other States, does not have a heart and lung bill covering fire-fighters. So firemen suffering from these types of illnesses and injuries are quite often just left to fend for themselves. In addition, most medical facilities are not aware of how to treat a fireman who has been brought into their emergency room.

Many men, including myself, have been brought to an emergency room after a chemical incident involving both known and unknown chemicals in liquid and vapor form and have received treatment that consisted of oxygen therapy, blood pressure check and at some locations, a chest x ray. There have been very few reports but there have been some that indicate a few hospitals have taken a blood sample.

Is this enough of a treatment or some kind of medical examination for firemen? We seriously doubt it. I have spoken to qualified medical personnel who have stated that there should be, but there is not, a treatment standard for use in these types of incidents. There are several government and private organizations that have developed the published guidelines that will assist firefighters in their approach and control of chemical incidents and these guides do explain some precautions to be taken but this still does not solve our medical problems.

The FMBA has recently requested that the State of New Jersey Health Department assist us by drawing up some medical protocol to be used in the treatment of firefighters involved in chemical incidents no matter what hospital in the State they are brought to. If you, Senator, are aware that there is any type of protocol for this medical treatment in place today, we respectfully request that you forward this information to us.

I have prepared a small package for the Senator and his staff. One, the red book you will see in there is a book printed, compiled, and published by the New Jersey Health Department which took about 2 years to publish. It points out the hazards and methods of control of fire fighting in the State of New Jersey.

The second one, which your staff is fully aware of, but I have some copies, it's an article "Deadly Smoke." It's published by the Register out of Santa Anna, CA. And this was sent to me by a member of the staff of FEMA and this publication now has so far sent about 7,000 copies of that to New Jersey by requests from various fire fighting and fire related service organizations.

Senator, on behalf of the officers and members of the State FMBA, I would like to thank you for your concern and interest in the problems that faced not only the firefighters in New Jersey, but all the workers and citizens of the State. I want to extend my personal thanks for your invitation to appear at this most important hearing and also I want to express my thanks to your staff for the assistance and kindness they have given me.

[An attachment to Mr. Butler's statement follows:]

Description of Standard Industrial Classifications (SIC) Codes
Covered by the Act

Titles and Description of Industries

Division: Manufacturing

Major Group 20.	Food and kindred products
Major Group 21.	Tobacco manufacturers
Major Group 22.	Textile mill products
Major Group 23.	Apparel and other finished products made from fabrics and similar materials
Major Group 24.	Lumber and wood products, except furniture
Major Group 25.	Furniture and fixtures
Major Group 26.	Paper and allied products
Major Group 27.	Printing, publishing, and allied industries
Major Group 28.	Chemicals and allied products
Major Group 29.	Petroleum refining and related industries
Major Group 30.	Rubber and miscellaneous plastics products
Major Group 31.	Leather and leather products
Major Group 32.	Stone, clay, glass, and concrete products
Major Group 33.	Primary metal industries
Major Group 34.	Fabricated metal products, except machinery and transportation equipment
Major Group 35.	Machinery, except electrical
Major Group 36.	Electrical and electronic machinery, equipment, and supplies
Major Group 37.	Transportation equipment
Major Group 38.	Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks
Major Group 39.	Miscellaneous manufacturing industries

Division: Transportation; communications; electric, gas, and sanitary services

Major Group 46.	Pipe lines, except natural gas
Major Group 47.	Transportation services
Major Group 48.	Communication
Major Group 49.	Electric, gas, and sanitary services

Division: Wholesale trade

Major Group 51.	Wholesale trade - nondurable goods

Senator LAUTENBERG. Thank you very much for that excellent testimony. Your colleagues in the fire fighting profession are the first line of defense. They are like the soldiers of war. They go out and obey the command. When I hear you say that they don't have enough protective gear to guarantee their at least equal chance for safety, as we might find in some cases in industry, where in many companies, that gear is an automatic distribution when you take the job, it concerns me a great deal.

We are grateful for the courage and the willingness of the members of your organization and others who aren't members who have the responsibility of responding when called upon. We ask you to stay with us a few minutes more. There are some questions I would like to ask of you.

Mr. BUTLER. Yes, sir.

Senator LAUTENBERG. Mrs. Keating, we are pleased to have you here. We recognize that the gentlemen that we already heard do this as part of their daily profession, but we are very interested in hearing from you as a citizen, to tell us whatever concerns you have, whatever observations you have made. You live in the neighborhood, you have a child. It's always nice to hear the wonderful cries of a child. And so we invite you to be relaxed, just say whatever comes into your mind and we are pleased to have you here with us. Do you want to pass that microphone over?

Mrs. KEATING. I live in the community of Woodbridge, which is about 7 to 8 miles away from the Linden facility.

Senator LAUTENBERG. Do you want to bring the mike a little closer?

Mrs. KEATING. Shall I begin again?

Senator LAUTENBERG. Whenever you are comfortable.

STATEMENT OF MARY KEATING

Mrs. KEATING. I live in the community of Woodbridge, which is about 7 to 8 miles away from the Linden facility. I have three children and a husband, who I'm very concerned about. I am not aware of any evacuation procedures. I can recall an incident October 6, I was in the kitchen when I started smelling odors which smelled like sour sauerkraut. It kept on getting worse and worse. It seemed like it was coming from my drainpipes. It was in the basement of my house. It was upstairs in my children's room. I remember running to them thinking my husband had just installed a microwave, maybe something is wrong with the microwave, and I was gathering my children to go next door to my next door neighbor to see if there was something wrong in my kitchen when I opened the door and the fumes out there were outrageous.

I called up air control to find out what to do. They did not know what was going on. They told me they were receiving hundreds of calls. I called up my pediatrician and he warned me that the only thing he could suggest is to get out of the area.

So I took my children and the first thought was to go to my mother's, but if I was to do that, I would have to take the turnpike right through Linden. So I decided to call the pediatrician again and he said that in Metuchen, the odors were not there, so we went to Metuchen for awhile. My husband is a mail carrier. That day, he

started a new route. He thought he was walking in a cloud of fumes, he thought it was just normal every day occurrences. His eyes started burning, his breathing became extremely difficult, and he was about to turn around and go back to the post office when some lady came running from the house saying don't you know what's going on? Get off the street. And he returned to work and they told him to go home, wash his clothing, his outer garments.

Senator LAUTENBERG. Who told him?

Mrs. KEATING. They were sent home from the post office and they were told—the news media told us there was nothing to be concerned about, just wash your outer garments. This odor penetrated my entire house. It was on my draperies, on my countertops. It was everywhere and we were told to wash our outer garments and everything would be fine.

I'm very upset. I want to live to see my grandchildren. I want my children to grow up to have children and I'm very upset about what is going on. Until recently, I did not know about all these hazardous pollutants in the air. I'm just becoming aware of this and I am very upset.

Senator LAUTENBERG. Certainly just that experience is something that ought to upset you. It upsets all of us who have never had your experiences. There is nothing that is as poignant as having someone in your family exposed; the concerns about the aftereffects, but when you are told that there is nothing to worry about but be sure to get the contamination off your clothing——

Mrs. KEATING. I am alarmed. Can I also state that ever since that incident, my husband has been on medication, which he takes every day now. He has Aldomet tablets to take and he is on an inhalant which he takes three or four times a day. My daughter Nicole, my oldest daughter, who was 6 in December, started having difficulty breathing and I was told that these are caused by allergies and I would like to know if this has any direct link to what is going on.

Senator LAUTENBERG. You consulted your family physician?

Mrs. KEATING. Yes, I have, and I know I am constantly catching a cold, and towards the evening, there are days when I have flu-like symptoms and this doesn't happen—I mean you catch the flu once a year. It doesn't happen every 2 or 3 weeks.

Senator LAUTENBERG. Did you notice it particularly after the exposure to that?

Mrs. KEATING. Yes; ever since the fall, ever since mid-November, I have had a constant cold.

Senator LAUTENBERG. Just again so we are clear, what was the date of this?

Mrs. KEATING. It was October 6, Saturday morning.

Senator LAUTENBERG. And you called the——

Mrs. KEATING. Air pollution.

Senator LAUTENBERG. Air pollution service.

Mrs. KEATING. And I was told they were receiving hundreds of calls and they did not know exactly what was happening at this time.

Senator LAUTENBERG. Mr. Hills, that was your office?

Mr. HILLS. That's correct, Senator. That was our office that had received those numerous calls.

Senator LAUTENBERG. What was that particular release? Where was that from?

Mr. HILLS. The particular release on that morning was of the Malathion from American Cyanamid.

Senator LAUTENBERG. Was that the first release?

Mr. HILLS. That was the first in a series of 15, yes.

Senator LAUTENBERG. Was it a coincidence of wind or weather condition because you live in Woodbridge?

Mrs. KEATING. Yes.

Senator LAUTENBERG. So you are south and a little bit west, I take it.

Mrs. KEATING. Yes, it is, and my husband——

Senator LAUTENBERG. That's not the prevailing windflow?

Mr. HILLS. No, it's not.

Mrs. KEATING. My husband works in South Amboy and the odor was down there.

Senator LAUTENBERG. That's directly south of Linden.

Mr. HILLS. Yes, sir.

Senator LAUTENBERG. Was it again just a peculiar wind pattern that day that brought it that way, do you think?

Mr. HILLS. We had a very stagnant atmospheric mass at that time. We had an inversion occurring. It was a very calm day. It was slightly hazy. I would say that it was these conditions that retained the cloud. I live in Monroe Township, which is approximately 18 to 20 miles southwest from the site of the incident. We got it even further south from that point. As it left the emission point and began to be carried on this stagnant airmass——

Senator LAUTENBERG. Was it visible?

Mr. HILLS. At the point of origin, yes. The visibility of the cloud was traced all the way down to the Raritan Bridge, crossing into South Amboy. At that point, it began to break up.

Senator LAUTENBERG. If it were the normal winds, it would have carried it due east?

Mr. HILLS. It would have carried it toward Staten Island yes.

Senator LAUTENBERG. Thank you.

Mrs. KEATING. I think that's a very good concern. You worry about what way is the wind blowing, is it blowing in your direction.

Senator LAUTENBERG. You shouldn't have to depend——

Mrs. KEATING. Right. Where do you go according to the way the wind blows?

Senator LAUTENBERG. Thank you very much. Mrs. Glamb, we are happy to have you here and as I said to Mrs. Keating, feel free to express whatever concerns you have. We are delighted that you are here with us today.

STATEMENT OF MERTY MAE GLAMB

Mrs. GLAMB. Thank you.

Senator LAUTENBERG. Tell us where you live.

Mrs. GLAMB. I live in Sewaren, which is part of Woodbridge Township. I have five children. I also have an elderly father which I take care of and the incident that I complained about was on October 6 of fumes and I didn't know what it was, either. I thought it was something with a sewer. I went through the whole house look-

ing for what could possibly smell that bad and when I went outside, the fumes were just as bad outside as they were in the house. So at that time, I called the board of health and called to complain to find out what it was. They didn't know then, either, what it was.

I think as a resident, I don't have enough knowledge to know what these fumes that somebody is letting out there by accident are doing to me and I think as a community resident and a county resident, I should have a little more knowledge, be taught something to know what to look for, what it's going to do to me, what it's going to do to my children, my father, things like that.

Is there any way, is there any kind of bill you are going to put up that's going to teach the residents to be aware of what to look for?

Senator LAUTENBERG. That's our objective and that's why it's important for us to hear from someone like you as a concerned citizen and parent. We want to know how it affects you because my responsibility in every way possible is to protect your family and every family in our State and our country and to avoid these things, I certainly am going to work very hard to do that.

In order, however, to make sure we have whatever information is available, we ask for people from the citizenry, people who are exposed to releases of chemicals into the air without knowledge, to tell us what you have experienced. The fact that you had—your suggestion is that you had no knowledge, no awareness, no direction in terms of anything you heard about, where to call, where to go, what to do?

Mrs. GLAMB. No, not whatsoever. We didn't know how to go about it to even find out what it was. And I think a lot of the residents from the area wouldn't know how to proceed, either.

Senator LAUTENBERG. You wouldn't know whether it was a backed up sewer or something to really worry about.

Mrs. GLAMB. Right.

Senator LAUTENBERG. And you live in approximately the same——

Mrs. GLAMB. Right, part of Woodbridge Township, Sewaren.

Senator LAUTENBERG. OK. Thank you for being with us.

I wanted to ask Mayor Hudak a couple of things, if I might. Mayor, you talked about training, you have got a fairly good sized fire department, 132 people. That's fully professional, no volunteers?

Mayor HUDAK. Exactly, right.

Senator LAUTENBERG. How big is your city?

Mayor HUDAK. Populationwise? Approximately 38,000 people.

Senator LAUTENBERG. Is that a pretty good size fire department?

Mayor HUDAK. Oh, yes I think that it's probably larger than you would find in most municipalities that have 38,000 people.

Senator LAUTENBERG. I would think so.

Mayor HUDAK. The reason for that is we know that we have many industries, they support us quite generously with their tax dollars. So therefore, we feel incumbent upon returning some of the money for the moneys that they are giving in the tax dollars.

Senator LAUTENBERG. Provide the service.

Mayor HUDAK. Exactly. And we buy equipment specifically to work along with the industry to take care of their needs, too.

Senator LAUTENBERG. Do they share their own evacuation plans with the community, with the town? Are you fully familiar with what they would do internally in response tc an accident or an emergency?

Mayor HUDAK. Pretty much so. We have an organization called LEMAC and that's the industries that work together along with our police and fire personnel. They have evacuation plans, warning systems and things of that nature and they are updating that now at our insistence and with our cooperation of our police and fire personnel.

Senator LAUTENBERG. Is that a recent——

Mayor HUDAK. No, quite frankly, they have been in existence for many years now but in the last 6 months or so, they have——

Senator LAUTENBERG. There has been more attention paid?

Mayor HUDAK. Absolutely.

Senator LAUTENBERG. It is true, and I'm not looking to smear any company's reputation, you have responsible companies in your community. We are going to hear from some of their representatives later on. But we all have a mission, you and I and all of us together here, and that is to make the environment safer wherever we can. So these questions are not designed to single out any company.

Did all the companies, do you find that all the companies in the area provide you with formal plans of their contingency programs in the event of an accident or an emission?

Mayor HUDAK. Senator, I wouldn't say all the companies because we have some rather small companies. However, we initiate on our own——

Senator LAUTENBERG. The small companies, is it possible that a small company could have a big problem?

Mayor HUDAK. I would assume so, depending on the quantities of certain materials that they may have in storage or perhaps are manufacturing.

Senator LAUTENBERG. Do you know what the materials are in each case in every company?

Mayor HUDAK. I would say, Senator, that because of the fine efforts of our fire prevention bureau and our fire department, we sort of catalog as best we can all the materials that are stored in the chemical facilities and even manufactured. We don't know the exact quantities, but we know——

Senator LAUTENBERG. Do you know how dangerous they are?

Mayor HUDAK. Oh, yes.

Senator LAUTENBERG. And do you know what the firefighting technique ought be when one of these things either explodes into the air or ignites in some other way?

Mayor HUDAK. I would say speaking on behalf of the fire department, I'm sure they are working with a rather limited knowledge of some of the chemical compounds and things of that nature. I'm not so sure that they have a handle on everything.

Senator LAUTENBERG. Who is the keeper of the files?

Mayor HUDAK. Our fire prevention bureau. We have a deputy chief designated, Harry Rochelle, who is present here with me today. However, they try to update their files and they set up standard operating procedure as to, for instance, let's say we have

a fire in a certain company, they have a manual that while they are en route, the people, the firefighters en route try to get familiar as possible with some of the things that they can.

Senator LAUTENBERG. En route to deal with the problem?

Mayor HUDAK. Yes, But we also prepare ourselves prior to that in training and discussions prior to any tragedy that may happen at one of these plants. The firefighters themselves are updating themselves en route in discussion and looking at some of the manuals that we have prepared on our own.

Senator LAUTENBERG. The community has a fairly large department. Do your firefighters have the protective gear in each case necessary to deal with chemical releases or chemical fires?

Mayor HUDAK. Senator, I doubt it. I think that we are also looking at updating our protective gear, too, and we know as city officials, city fathers, what our responsibilities are to our firefighters and our police personnel and we are updating that right now.

In fact, we just put breathing apparatus equipment into all of our police cars because usually the police are the first on the scene and we want them to become, if they are entering upon the scene where there could be a toxic plume or cloud, we want them to go in at their protected best as possible.

As far as our fire department goes, it just is a standard firefighting equipment that you would find in most communities. Maybe just a little better quality, perhaps, but we are talking about areas that we are not very familiar with, either. It's becoming more familiar now. And we are going to be updating and looking at it closely just what should be worn and what other protective equipment and clothing can be given to our firefighters. Once we identify what can be available, we are going to go out and purchase the equipment.

Senator LAUTENBERG. Some part of it, Jim, is on the job training.

Mr. BUTLER. Yes, very much so.

Senator LAUTENBERG. I wonder if we would do that with airline pilots.

Mr. Butler, do you want to respond in any way to the things that the Mayor said? Again, we are looking at, I guess, one of the strongest fire departments in the State.

Mr. BUTLER. The mayor made some good points, Senator. With the buildup of so-called paperwork or forms, if you may, relating to just what is in each location, which department is going to respond, and being in a State FMBA position, I talk to men throughout a lot of these towns, especially in the northern half of the State, and Linden is in many ways trying to almost take the lead in preparing plans, procedures to better protect their men. They may have a position where they have more industry that could cause problems and they are taking steps.

I don't know, maybe I should or shouldn't ask you, but there has to be budget restrictions in all towns and maybe the budget poses a problem for the necessary protective turnout equipment that might be necessary. They are investigating it now, but you are talking a couple of thousand dollars per unit and it can get expensive. But I believe that——

Senator LAUTENBERG. When we send our soldiers to war, we always try to give them the best equipment possible and I don't

hear anybody making the case that the dollars aren't available there.

I want to ask you something else, Jim. You talked about individual reactions that you ascribed to the fire at Chemical Control. And you talked about four people you said who suffered lingering health problems.

Mr. BUTLER. Yes, sir.

Senator LAUTENBERG. But how about among firefighters generally, is there a difference in the cancer death rate?

Mr. BUTLER. Yes, sir; I would just like to mention some of the press people have gotten a copy of this this morning, too, but anybody that might want a copy, they will probably be available, the information, through your staff personnel. But the cancer rate as shown in this publication here is way out of range with the normal cancer rate that you would have in any other population in the United States.

Senator LAUTENBERG. Do they have it in specific numbers?

Mr. BUTLER. Yes, sir; they have charts here. Cancer death rates, the national average is 20.4 percent and in 1980, the national average for firefighters in 1980 was 38.2 percent, very close to double in the cancer rate alone.

Senator LAUTENBERG. That was true on a relative basis before we became aware of the volume of toxic smoke present at many fires?

Mr. BUTLER. Yes, sir; I believe with just the manufacture today of so many brand new chemicals, so many combinations of chemicals that you didn't have 20 or 25 year ago, you didn't have very many of the chemicals and the chemically made products that you have on the market today, thus the increase of exposure just in the normal dwelling fire. We are coming into contact with more and more items, furniture, rugs, interior decorations that are now very chemically induced types of items.

Senator LAUTENBERG. I wanted to ask Mr. Hills something. Under our Superfund law, companies are supposed to report releases of toxic chemicals immediately. The information is then supposed to be channeled to people at the local level, like yourself, and to your local fire departments. You get lots of telephone calls from citizens about leaks. Is that a fact?

Mr. HILLS. That is a fact, yes, sir.

Senator LAUTENBERG. But are you receiving reports from the Federal Government about these releases, about these materials? For that matter, I want to ask you a direct question. Are you receiving any help at all that you could ascribe to the Superfund law?

Mr. HILLS. As far as Superfund goes, I can honestly say no. I think the attribute that comes about as a result of the use of Superfund is the fact that there are reporting requirements in the law but they are only going to be as good as the system itself works. If we are not getting the calls, we are not responding, we are not assessing, we are not advising and the timeliness of the call is the most important thing.

We are not going to stop a release. It is impossible. You can reduce its potential but you are not going to stop it and as a result, what you have got to do is to be prepared to respond so that you can then assess and advise those responsible officials on the scene

as to the recommended course of action to implement. As soon as we know exactly what we are dealing with. It is our job to relay to the public that which we know about the compound so that safeguards can be taken.

We have heard a lot today about the safety gear. That's a mandatory need. I have only got a two-man team fully equipped to answer emergencies. We have got to equip more people on our team. The most important thing to remember is that you cannot put a price tag on the public's health and safety. We desperately need assistance in whatever way possible from the Government to properly outfit and equip those programs which are geared to respond and to act for the benfit of the public.

Senator LAUTENBERG. I want to thank all of you. I was interested Mrs. Keating, in the phone call to your physician, pediatrician, when you asked him what to do and where to go. He became almost environmental director at that point and said go to Metuchen if I am correct.

Mrs. KEATING. I asked him if the odor was there and he said no and that was the only other place I could think of.

Senator LAUTENBERG. Is there anyone here who can point to a broad citizen awareness of actions to be taken in the event of a chemcial release that really gets to the citizens? And again, not to criticize any town, not to criticize any jurisdiction, is there any place, Mr. Hills, Mr. Butler, that you are aware of where the average resident of a community knows what to do when there is a noxious odor, a cloud, or what have you? Have you Mrs. Keating or Mrs. Glanb?

Mrs. KEATING. No, I haven't.

Senator LAUTENBERG. Are you aware of any, Mr. Hills?

Mr. HILLS. I think the example was, again, using a sore point, the October 6 incident, Woodbridge was one of the most directly impacted towns by the vapor cloud. Monroe Township, some 18 miles southwest had its ambulance corps out, the police were also out broadcasting the advisements to stay indoors, out of the way of the odor in the vapor cloud. The timeliness of reporting factor here is the most important issue again. The basic mechanism is here. It has got to be coordinated with all the respective authorities.

Senator LAUTENBERG. The mechanism sounds as if it's there but what I don't see is that it has worked to the satisfaction of the residents of the community. Can they say we know where the fire alarm is on our block, we know what number, we know to call 911, we know how to respond.

What do you do when the smell is overpowering? What do you do when the eyes begin to tear? What do you do when the kids begin to cough?

You called the office, the coordinating office. How did you know that number?

Mrs. KEATING. I have it right by my telephone.

Senator LAUTENBERG. And you?

Mrs. GLAMB. The board of health.

Senator LAUTENBERG. You called the board of health. Mayor, do you think all the citizens have that number?

Mayor HUDAK. No; but they can call our emergency services, primarily the police department, and they would advise them. We have an updated program now that our police department——

Senator LAUTENBERG. Tells them how to respond.

Mayor HUDAK. Yes.

Senator LAUTENBERG. Do the citizens in the community, and I don't want to pick on Linden because I know Linden works very hard, the citizens of communities around our State have in front of them an evacuation plan that says OK, this is what we do, we pack A, B, C, get the kids in the car and go east, west or otherwise? Anybody ever hear of anything like that?

Mrs. KEATING. No.

Senator LAUTENBERG. Thanks each one of you. You have been terrific.

We are appreciative of your cooperation today to join us at this hearing, each one of you from important companies in our area. I know some of you from other circumstances. We have talked perhaps not about this, the discussion under way today, but other topics that relate to the community and I must say that I have been always impressed at the willingness of you individually and your companies to participate. So we appreciate you participation today.

In typical government fashion, we have run a little bit late. One of the habits I have attempted to bring from my corporate life is timeliness. There is something in the atmosphere that doesn't permit it in either hearings or most other government functions. Would you quickly give your name and your company affiliation, just go right down the line.

Mr. GOUGHNOUR. Bob Goughnour from Du Pont.

Dr. TERENZI. Joe Terenzi, American Cyanamid.

Mr. UTICAN. Martin Utican, American Cyanamid.

Mr. TSU. Kin Tsu, American Cyanamid.

Mr. SOUTHARD. Engle Southard, Union Carbide.

Mr. PYLE. Bob Pyle, Union Carbide.

Mr. BROWNING. Jackson Browning, Union Carbide.

Senator LAUTENBERG. Dr. Pyle, I wonder if we can start with you. The other members of the panel are you available for some time? What are your time requirements?

Mr. GOUGHNOUR. OK.

Senator LAUTENBERG. Dr. Pyle, would you be kind enough to proceed with your testimony in summary form, if you can do it. Thanks very much.

STATEMENT OF ROBERT E. PYLE, VICE PRESIDENT, UNION CARBIDE CORP.

Dr. PYLE. Mr. Chairman, members of the staff, I have condensed our remarks down to approximately 10 minutes. My name is Robert E. Pyle, vice president of Union Carbide Corp.

My job responsibilities encompass several corporate functions, including general supervision of Union Carbide's corporate health, safety, and environmental affairs activities. With me today on my left is Mr. Jackson B. Browning, vice president of health, safety, and environmental affairs, and on my right is Engle D. Southard,

health, safety and environmental affairs manager of our specialty chemicals division. Mr. Southard is located at our Bound Brook, NJ, facility.

Mr. Chairman, we are committed to sharing the lessons learned from the Bhopal incident with government and industry. I am here today as a part of this process, and we look forward to sharing some of our ideas and concepts. We are convinced that the chemical industry must continue its excellent safety performance.

We also must work together, government and industry, to regain the public's confidence that the chemical industry operates safe plants and that those public authorities responsible for protecting public safety and the environment have the authority and the resources necessary to meet the public interest.

I would like to discuss with you briefly community right to know, emergency response preparedness, and our approach to safety management.

We recognize that public health and safety officials and many others in the community need to know more about the potential danger associated with those hazardous materials manufactured or handled in their communities. We believe that effective emergency preparedness and response capability at the local level is vital. At Union Carbide, we have identified five principles which we have applied in our analysis of these ideas.

We believe that sound public policy improvements should: (1) improve the public's confidence in the chemical industry's safety; (2) improve the public's confidence in the regulatory authorities' ability to protect their interest; (3), facilitate the most efficient way to achieve the specific results; (4), be compatible with existing rules and regulations and (5), be capable of pragmatic application by both government authorities and industry.

We believe the emphasis must be on communicating the hazard information. It is our belief that the Federal OSHA Hazard communication standard provides a solid formula for communicating hazards, precautions and emergency response procedures to employees. Its many provisions, including workplace chemical lists, material safety data sheets, observations for self-protection and safe operating practices are the same elements that a community should know and therefore, are a good basis for effective community hazard communication.

The material safety data sheets required by OSHA's hazard communication standard provide a solid basis for communicating to all segments of the community. Community right to know programs must focus on effective communication. Merely making the information available to everyone who requests it may result in poor communication, raising needless apprehension, misinterpretation and unfounded public fear.

We believe that the most effective and efficient use of available government and industry resources will require designation of one public authority as the lead community organization to receive and coordinate the distribution of hazard information. Union Carbide feels strongly that both industry and government have a shared responsibility to ensure effective and useful hazard communications. We are continuing our work to develop programs through which industry can best contribute.

Here in New Jersey and elsewhere, our chemical facility managers are working with community and public authority leaders to devise effective approaches. Representatives from our Bound Brook plant participated in Senator Ray Lesniak's Friday, February 15 meeting where he outlined his plans for the establishment of a Union County/Middlesex County Hazardous Materials Advisory Council. We look forward to learning of the results of this approach to community right to know.

Hazard communication, of course, is a basis for effective emergency response preparedness. Our ongoing reevaluation of emergency response planning and capability in communities where Union Carbide operates chemical facilities convinces us that improvement is possible.

The key to success may well be the hazardous material advisory council approach. We believe that HMAC's provide a very practical forum for defining and addressing community hazardous materials risks and concerns, and for the exchange of hazard information. Through broad participation, the councils promote greater shared awareness of problems and in summary, the councils encourage and facilitate a higher level of preparedness and thereby greater public protection in general.

Their success requires the involvement of a broad community base willing to communicate, to cooperate and to compromise. Union Carbide is a participant in such emergency preparedness groups in West Virginia, Texas, and Louisiana as well as our Bound Brook, NJ, emergency planning group here in the State.

Now I want to turn to the subject of the role of government in emergency preparedness. Frankly, we believe it is in our best interest as well as society's that nationwide guidelines be developed to ensure that appropriate planning and response capability exists where needed. Developing legislation to facilitate such effective guidelines will be a challenging job and one that Union Carbide is dedicated to assisting.

I can say from personal experience that the Bhopal incident has dramatically increased the urgency and activity of the chemical industry's efforts to develop improvements in public safety provisions. For example, Union Carbide is active in the American Institute of Chemical Engineer's priority programs to improve engineering standards and risk analysis capability.

Also, Union Carbide representatives are working in the Chemical Manufacturing Association's nationwide efforts to develop and implement improvements in community awareness in the emergency response program. Virtually all companies within the industry support these and other programs in addition to their own accelerated internal efforts.

As with the subject of hazards communication, Union Carbide's chemical location managers and technical specialists are working with local leaders, agencies, and community organizations to improve the effectiveness of emergency preparedness programs. Our experience suggests that no industry, organization, or Government agency has by itself all the knowledge or experience at this time to develop the most effective and efficient hazardous materials emergency response guidelines.

Congress may want to authorize several pilot programs in the near future prior to implementation of a comprehensive national program. Union Carbide would be pleased to participate in such developmental programs. We sincerely believe the Nation will benefit if we jointly work to develop the very best public policies.

As important as emergency response preparedness and hazard communications are, the critical element is the operational safety of our facilities. It is our primary consideration. As a check on the effectiveness of our, of Union Carbide's safety programs, we have an ongoing system of safety reviews and audit procedures. You have indicated an interest in operational safety surveys and I will therefore use briefly the OSS as an example of Union Carbide's commitment to safety management. The OSS surveys form but one part of Union Carbide's overall risk assessment/risk management effort.

The primary task of the operational safety survey team is to systematically review the operation and identify processing, equipment, and operational hazards. Attention is directed to evaluating and classifying hazard potentials. After the survey has been completed but prior to leaving the plantsite, the OSS team meets with appropriate members of plant and departmental management to report its findings. Union Carbide's operational safety surveys are designed to discover any deficiencies and to suggest additional safety improvements which may be needed in our plants.

It is important to note that the safety team considers even theoretical situations and assumes that highly improbable events could take place. Our safety management program gets results. In the chemical industry, which has one of the best safety performances of U.S. industry, Union Carbide has consistently been among the leaders.

So in summary, we strongly support both community material hazards communication and emergency response preparedness, while recognizing that they are very complex subjects for public policy. This complexity derives not only from their technical nature, but also from the broad mix of involved industry facilities with government and nongovernment organizations. Significant work is in progress on both subjects by many organizations, as well as chemical industry groups.

We therefore urge that Congress and industry work together to incorporate the results of these efforts and the industry's proven safety management systems into improved, consistent nationwide public policy.

I thank you, Senator, for inviting us to discuss and contribute on these important issues and now we would be pleased to answer questions.

Senator LAUTENBERG. Thank you very much, Dr. Pyle. I know that your company is very serious about wanting to participate in making the environment around which and within which your plants exist safe. I have talked to Mr. Anderson directly, and Mr. Browning was there, in order to get some understanding of what took place in Bhopal and what we can do in the future to prevent another tragic event. I'm pleased to hear some of the suggestions that you made in terms of what I think is a minimum uniform standard throughout the country in terms of how we operate.

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It's peculiar, I must say, that your industry, if I can use the collective to describe the business that we are talking about today, is one that does have, as we now know, potential for catastrophe. And yet the burden of proof is not really directly on your shoulders, as it is, for instance, in the nuclear industry.

Before Three Mile Island is permitted to operate again, there will have been extensive review by the Nuclear Regulatory Commission, and it seems to me, that the burden of proof rests on the Government to show that you shouldn't start if there are unresolved questions as opposed to the nuclear utility industry, which must prove that questions are resolved.

You are not having to answer that question. However, Mr. Anderson gave assurances on another panel that the plant at Institute would not be restarted before Union Carbide had a complete understanding of what happened in India and I was assured that such a similar accident could not happen here.

When do you expect to have the full report?

Dr. PYLE. Sir, I think we have made press releases in recent days that indicate that we would hope to start up this plan approximately April 1. But the proviso is made and often gets lost in a communication that that is only if we are able to finish our investigation and get a report out on the Bhopal incident. So in other words, there is no implication that we are going to unilaterally start up the Institute plant. It will be done in cooperation with the authorities, National, State, and local.

Senator LAUTENBERG. So do you expect one report, then, to be done before April 1?

Dr. PYLE. I would hope it would be issued before April 1.

Senator LAUTENBERG. Are you making a public statement that you will not restart before that report is issued?

Dr. PYLE. I'm only reinforcing the public statement that our chairman has made.

Senator LAUTENBERG. Will there be enough time given after release of the report for public digestion, whatever that takes before that plant starts?

Dr. PYLE. Yes, sir.

Senator LAUTENBERG. One of the things that gives us concern, and again, if the tone sounds accusatory, it's not, it's inquiry. In your internal safety report that has now become an external document, September 11, 1984, one of the attachments says, and I read it here as a quote, "real potential"—again, I want to call attention to the date, September 11, 1984, this precedes Bhopal, and I quote, "real potential for serious incident exists considering that response to such a situation would not be timely or effective enough to prevent catastrophic failure of the tank."

In your prepared statement, you did talk about making a serious attempt to make sure that the knowledge was dispersed properly.

Dr. PYLE. That's correct.

Senator LAUTENBERG. What happened with knowledge distribution in this instance?

Dr. PYLE. In this instance?

Senator LAUTENBERG. Yes.

Dr. PYLE. I think that we were responsive in the distribution channel. I think that the issue that you are referring to is perhaps this information didn't go to Bhopal.

Senator LAUTENBERG. Right.

Dr. PYLE. But the situation, I think, is a rational one and Jackson Browning here on my left is the gentleman who participated in the Congressman Waxman hearings and has spoken to this issue before and I would like him to speak to it.

Senator LAUTENBERG. Sure, Mr. Browning.

Mr. BROWNING. Senator, thank you. Reading the report as a whole, it is clear that the team that went to Institute concluded there were no imminent hazards at the plant. We categorize our hazards as imminent, serious, grave.

Senator LAUTENBERG. One question, at the plant or in the process?

Mr. BROWNING. The operational safety survey was limited to the MIC unit at the plant. That was the subject matter of the survey. Having concluded there were no imminent hazards that needed to be taken care of right now, the term then inquired on a theoretical basis to some of the things that might happen and four things strung together, they said, might give this a potential problem. They were dealing with a brine cooling system in one of the tanks at which MIC was stored.

There is no brine cooling system in the tanks in Bhopal, it's a Freon refrigerant. And among the four things that were listed as having to occur sequentially to create the problem, one had to do with the lack of or inadequate frequency of measuring the contents of the storage tank and the others, as I recall it, had to do with the fact that the team had operated for so long in that plant without a problem, the plant had, that they might become somewhat complacent.

In response to that report, and the plant management is required to respond satisfactory to the auditors, they agreed to more frequent testing of the material in the tank and also stepped up the training program to make sure that the successes we had in the past did not lead to undue complacency in the future.

Senator LAUTENBERG. Was there a cost reduction program in process at that time that had any influence—let me separate the two. Was there a cost reduction program in the Indian plant in process at that time?

Mr. BROWNING. I would assume so. Cost reduction, by which I mean we are looking at our processes to see if they can be operated more efficiently, more effectively, is an ongoing management technique.

Senator LAUTENBERG. I'm talking about something unusual. I'm talking about response to weakening profits or lowered sales or anything of that nature. Was there a decision made by Union Carbide that said, look we have got to cut back here and there.

Were changes Bhopal made that altered the operation of the plant?

Mr. BROWNING. I'm not aware of any special emphasis on programs at the Bhopal plant at that time. Again, it's a management technique and philosophy that we do pursue throughout the corporation on a continuing basis.

Senator LAUTENBERG. Was the recommendation to replace the brine coolant in Institute turned down by the company because of cost factor? Wasn't there a change contemplated there?

Mr. BROWNING. I don't have that report in front of me, sir, but I don't recall that it recommended that we change the brine cooling system. It pointed out that the existence of the brine cooling system, which, as you would understand, means that we do have a solution of salt and water on one side of a pipe and a medium as a coolant on the other side of the pipe, there was concern of a possibility of mixing the two through a leak or a joint or whatever and in the operation of that, they talked about several things that could happen that might create a problem and those I have just referred to. That having been taken care of, there was no objection overall to the operation about the coolant.

Senator LAUTENBERG. Is it established yet that water contamination was a principal causal factor in the accident in Bhopal?

Mr. BROWNING. We have not concluded that investigation yet. It might help in understanding just what it is we think we might be able to do. The investigation of the incident in Bhopal is within the purview and the jurisdiction of the CBI, which is roughly analogous to our FBI, and as would happen in this country, an organization like that, when it takes over an investigation, is particular about others who might be involved in the same arena. There is always the concern about tampering with evidence, talking to witnesses and the like. So they have complete control of that.

Our team in the Bhopal factory spent most of its time trying to work off the MIC that remained after the tragic event. They were hopeful that they would be able to interrogate people in the plant at the time of the accident but as it turned out, they were not permitted to do that.

They did return with a sample of material from the vessel that had the release and had been engaged for a number of weeks now in experiments in which they hope and think that they will be able to duplicate the materials and conditions which were existing in the plant at the time of the release. Having done that, they would then be able to tell us what happened.

They probably will not be able to tell us how it happened, since they would not have access to the interviews at this time that I have spoken about. But if we can tell what happened, we think sufficient safeguards can be implemented at our operation at Institute to assure the community and officials that the likelihood of that occurring again would be, as the OSHA report has just said, an extremely unlikely or remote event.

Senator LAUTENBERG. There is some controversy, as you know, about the OSHA report and we do hear concerns, Congressman Florio testified to that, about who is in charge. We have to clear that up. Your employees, your management or often residents in the communities in which these facilities exist, you don't want them exposed, they don't want to be exposed any more than anyone else, so I wouldn't take comfort in the OSHA report. We are going to have OSHA here on a later panel. I know that you want to work with the public to ensure that the Institute, WV, plant can be run safely.

Would you consider a public review before that plant is opened? I know that we are now talking about involvement of the public and the Government in restart but we are living in a different world, as has been said. Bhopal changed the existence of the lives of the people who run chemical companies probably forever.

Mr. BROWNING. We are talking with the State authorities and we will be guided by them in the kind of hearings and presentations that they think will be appropriate. We are also talking to OSHA, we are talking to the EPA and so far we have had nothing from any of these groups that indicates that they found something inherent in the operation of the plant that would prevent its opening.

Senator LAUTENBERG. Would you be bold enough to say here that even though it's not required, that you would solicit, elicit, secure general community approval, however that's manifest, before you started the works down there?

Mr. BROWNING. I would like to be guided by the local authorities down there and I think they will set up what they think is appropriate. I don't want to go into a community like that and dictate what ought to be done. But certainly we are not going to operate that plant until the local people have been satisfied.

Senator LAUTENBERG. So let me not mince words and ask you once again if you would be willing to subject yourselves in that decision to a public approval, I'm not talking about going through citizen by citizen, taking a referendum, I'm talking about local authority, State authority, and let them say yes, we think everything is where it ought to be or do you reserve the management prerogative that says look, we are satisfied even if the folks around here aren't?

Mr. BROWNING. I think we are perhaps having some kind of problem with semantics. We have not said that we are going to go ahead on our own. As a matter of fact, there are no requirements at this point that we have additional permitting authority to operate the plant. We have not make it very clear we are not going to rely upon that as a legal matter. We are talking to the Governor, to the State authorities down there, the local Congressmen, and we have kept them apprised of what we are doing and we tell them that we understand that operaing that plant in that location will require some extraordinary communication and with the people and we are asking them to guide us in what they think would be appropriate.

Senator LAUTENBERG. I would ask, Mr. Browning, Dr. Pyle, that you keep my office informed. Even though Institute, WV, is not New Jersey, operation of the plant affects American lives, a community, and everybody has that kind of symbiotic feeling about what happens there links up with what happens here and we want to be very much aware of what is going on.

Dr. PYLE. Yes, we will be very happen to respond to that.

Senator LAUTENBERG. You are advocating a Right To Know Response Program based on the OSHA hazard communication standard. But a quick review of the OSHA requirements and the New Jersey law shows that OSHA, at least in comparison to that which we had here, is relatively deficient in 23 categories where the New Jersey right-to-know law requires something, some notice ranging

from disclosure of safety data to provisions of information to local fire and police departments.

How can that many loopholes protect the public in New Jersey or elsewhere? What do we have to do?

Dr. PYLE. Sir, I think that in principle, as you know, and we have stated we are for employee right to know and for community right to know, but again, as a firm that operates in many, many States, we would potentially find ourself being subjected to a variety of legislation differing from State to State.

So that we felt it was in the industry's interests and our interests to be involved with a nationwide or Federal standard, just as we are proposing a Federal guideline in the community right to know.

Senator LAUTENBERG. Would you think that's a good idea if the New Jersey example is the one to follow?

Dr. PYLE. I beg your pardon?

Senator LAUTENBERG. Would you think it was a good idea to have a national standard if it replicated the one that we established here in the State of New Jersey?

Dr. PYLE. I don't know. I think we would have to—I really don't know.

Senator LAUTENBERG. New Jersey takes pride in the fact that it's a good economy, a good State to operate in, but we also are very much aware of protecting the safety of our citizens and I think that our requirements are somewhat more stringent, yet we value very much the presence of an industry that employs many, that contributes to our economy and we think is concerned about the safety of the citizens. Sometimes problems are developed on site and it's unfortunate.

I wonder if I can ask the indulgence of our other panelists—I thank Dr. Pyle and Mr. Browning—if we were to take a break for a few minutes. Your companies, fortunately, don't have as much of the spotlight glare. And we need a few minutes for some housekeeping functions having to do with the committee. Could you indulge us by returning after our break. We will try to make it a half hour.

Is that possible, under your schedules? Mr. Tsu?

Mr. TSU. Sure.

Senator LAUTENBERG. Thank you all very much. We will adjourn temporarily. Thank you, Dr. Pyle.

[Whereupon a recess was taken.]

Senator LAUTENBERG. I request that everyone take their seats, please. I want to thank you, the panel, for your willingness to indulge our time schedule. We invite your comments. Mr. Tsu, do you want to proceed with your statement?

STATEMENT OF KEN TSU, PLANT MANAGER, WARNER'S PLANT, AMERICAN CYANAMID

Mr. TSU. Yes; thank you, Mr. Chairman, members of the staff. I have cut down my statement to try to get into the time constraints that we all want to meet. My name is Kin Tsu. I'm the plant manager at the Cyanamid Linden, NJ, manufacturing facility. I have with me Dr. Utidijian, our corporate medical director, on my left,

and Dr. Terenzi, our corporate director of environmental toxicology and safety affairs.

Our plant in Linden, which began production in 1916, now employs about 600 people and represents more than $100 million in investments. The products we manufacture fall into three main groups, acrylamide-based products used primarily to treat sewage and drinking water supplies, organophosphates and other products used both as pesticides in crop protection and public health spraying and as mining agents; and our process chemicals used by our plant or by other companies in manufacturing their end products.

My first priority today is to apologize for the community disruptions and concern that resulted from the three instances at our plant between October 6 and January 21. Although the accidents involved three different products and different processes, they have two causes in common. First, they were caused by pressure buildup in tanks due to overheating and second, they involved chemical reactions that may be characterized as self-propagating.

To prevent a reoccurrence, we have intensified our effort to carry out systematic safety and operability analyses on our manufacturing operations and material storage. These analyses are fault-free type procedures used by industry and NASA to identify potential problem situations that could lead to accidents such as an emission. The procedures include review of any operational factor such as training, equipment, instrumentation, operating procedure, maintenance, chemical reactivity, et cetera.

To supplement this approach to evaluating process risk, we have augmented our existing staff with additional personnel from other locations, company locations, to review the adequacies of our operations and to expedite improvements.

In addition, we have hired the Stone and Webster Engineering Corp. to independently review the adequacies of our processes and hazardous materials handling systems. In addition, we have temporarily shut down or postponed certain operations in order to reevaluate and ensure that the identified steps that will minimize risks have been taken. We have increased monitoring of our storage tanks and where indicated, additional alarms and interlocks are being installed on a priority basis. To augment our existing training program, especially in safety procedures, we have added a full time training director to our staff.

To underscore these actions, we have intensified round the clock management control with senior plant management visiting the plant during all shifts, including nights, weekends, and holidays.

With that in mind, I would like to review safety, environmental protection and emergency response procedures. From recent events, it is clear that improvements are necessary. Our safety program is designed to prevent accidents and protect health and is based on operational practices. Training begins with the indoctrination program that includes safety standards, chemical hazards information, personal protection equipment, the plant's fire system and safety rules.

Employees then enter skills training period to prepare him for his specific job. This training period includes indoctrination in specific safety procedures for the jobs tasks he will perform and emergency response procedures for the materials handled. In addition,

there is a monthly safety meeting in each department to discuss problems and review procedures.

The medical surveillance program in our plant includes a comprehensive physical exam for each employee at the time of hire and then every 2 years under the age of 40 and annually thereafter. The other key elements of our medical surveillance program is industrial hygiene, which monitors the employee's exposure to chemicals on the job. This monitoring is based on our own, OSHA or ACGIH, that's the American Conference of Governmental Industrial Hygienists, standards. These standards are in many cases more strict than OSHA standards. We are in compliance with these standards.

As a result of this medical surveillance program, we have not identified any significant occupational disease patterns associated with the chemicals handled or manufactured at our plant.

The plant's environmental service department is responsible for insuring that all plant operations are in compliance with Federal, State, and local air, water and solid waste regulations. This effort involves maintaining compliance with approximately 220 NJDEP approved air permits. In addition, our operations are governed by active water and solid waste permits.

NJDEP conducts quarterly inspections of our site, each lasting 3 to 4 days, to verify our compliance with these air regulations. Our plant has spent over $14 million for environmental protection facilities and equipment, with an additional annual budget of approximately $4 million for environmentally related activities.

I'll turn now to our emergency response program. The objectives of this program are to bring the emergency under control as soon as possible and to notify the community about the emergency. Bringing the emergency under control is the responsibility of the management and employees who are manufacturing the product. Other personnel, including our plant fire department, will assist them. At the same time, the Linden Fire Department is notified. This notification is automatic. If necessary, assistance from the Linden Industrial Mutual Aid Council is also sought. The latter organization Mayor Hudak has already discussed.

The key to an effective emergency response program is local cooperation and that has been in place for many years in Linden. For example, within the past year, in cooperation with the Linden fire department, most of the city firemen went through an indoctrination of our plant and its products. This took several days. We also provided the department with a complete list of products used or stored at our plant, a plot plan with each storage tank numbered and its contents identified. This is an ongoing program year after year.

The committee should be aware that there is a critical need for a central notification system to coordinate emergency response. We are very pleased that the Middlesex County Health Department has taken an initiative in this area and is establishing a system of cascading phone calls. Such a system would allow us to call department officials in the event of an emergency, tell them what communities or areas may be affected and they would notify the proper New Jersey and New York agencies. In the interim, until the Middlesex Health Department system is fully implemented, we will

continue to notify the New Jersey agencies, as in the past, and we have arranged with the New York City Police Department to be the control point to alert Staten Island Police precincts to emergencies.

A key concern during an emergency is public health and that is in place in the medical advisory system. It involves one phone call to the New Jersey Poison Control Center in Newark, which would notify both New Jersey and New York State Health Departments where appropriate. Cyanamid's physicians are also prepared to act as advisors to doctors treating people who might be exposed to chemicals in an emergency at our plant.

There are two new efforts that are in the early stages of addressing emergency response needs. First, in December, we joined with other companies, Federal and State agencies, at the request of Congressman Molinari, to set up a plan for odor response. We will be getting back to him shortly. The second initiative, again, by Senator Lesniak, is the hazardous materials advisory council, which will define risks in the community and determine plans to minimize those risks and to create a higher level of preparedness to deal with those emergencies.

We are active in our support for both of those initiatives. It is Cyanamid's position to support and work to achieve a National Hazardous Materials Control Program which would address three areas of concern: Workers' right to know, community right to know, and emergency response. Cyanamid's written position on this matter is being submitted to you today.

In conclusion, Cyanamid as a company and our plant in Linden are totally committed to prevent accidents that impact on the community and to respond swiftly to emergencies.

Thank you.

Senator LAUTENBERG. Thank you very much, Dr. Tsu. Would you be kind enough to stay with us and we will hear the testimony from Mr. Goughnour, who I didn't recognize without his hard hat, his safety glasses, and the shoes that we both wore when we toured your facility. If you would, Mr. Goughnour, proceed and then we will have a chance to ask questions. Thank you very much, Dr. Tsu.

STATEMENT OF J.R. GOUGHNOUR, PLANT MANAGER, Du PONT CO., GRASSELLI PLANT

Mr. GOUGHNOUR. Thank you, Senator, for this opportunity. I will summarize this. I'll summarize my remarks that you have a full statement of.

My name is Bob Goughnour. I'm manager of du Pont's Grasselli plant in Linden. 1985 is the centennial of the Grasselli plant and for 100 years our plant has produced sulfuric acid, which is a basic building block of American industry and the highest volume chemical used in this country.

During your visit to the plant, Senator, on February 1, you saw the new capital investments that have kept our plant up to date. These improvements have been consistent with du Pont's strong commitment to safety, health, and environmental protection.

Throughout its history, the Grasselli plant has always been a safety leader. We are very proud of that record.

The environmental incidents that occurred at the plant in November were unprecedented and we have taken steps to improve our position in this important area. The first step we have taken is to conduct special process reviews to cover all possible sources of sulfuric fume releases. At the request of the New Jersey Department of Environmental Protection, we have engaged an outside review firm to supplement the process reviews being done by du Pont experts. We will assess the potential for environmental risk of such releases in terms of possible effects on human health, animal, plantlife, or property.

I would like to summarize briefly the reviews of the November 9 and November 27 incidents. On November 9, an SO_3 fume release occurred when, contrary to established practice, a process line was steamed. This allowed a release of less than a gallon of frozen SO_3.

Because the release had the potential of affecting our neighbors, we immediately notified them, as well as the EPA, the DEP, and local agencies. As you saw, we are——

Senator LAUTENBERG. Bob, you say you immediately notified. Are you talking about a release that might not have been reported because you deemed at that time——

Mr. GOUGHNOUR. I will cover that in just a minute.

Senator LAUTENBERG. OK, thank you.

Mr. GOUGHNOUR. We are conducting a thorough process review, as I showed you at the plant, with the objective of preventing any fume releases such as occurred on November 9. The process there will not be restarted until the rview is completed and we are satisfied we have identified and eliminated all possible sources of releases.

On November 27, we were transferring 65 percent oleum by pipeline when the mechanical seal on the pump failed, releasing at that time 2 to 3 gallons of oleum and creating SO_3 fumes. That fume release lasted about 5 minutes. Based on that short duration of that spill and the fact that we concluded the fumes were dissipated leaving the site, no emergency contacts were made. We have since met with Commissioner Hughey of the New Jersey Department of Environmental Protection and have assured that agency that we will report any incident in the future.

A second area of improvement where we have been active, as I showed you, is preventative preplanning. This is an ongoing method of pinpointing any possible source of disruption so it can be documented, corrected, and used to supplement work procedures.

The third step we're taking is to increase our involvement in community preparedness for emergencies. As Kin Tsu was saying, the plant, our plant, is a very active member of the team State Senator Lesniak has formed to establish a hazardous materials advisory council for Union and Middlesex Counties. These councils promote a shared awareness of problems and lead to the most effective use, we feel, of Federal, State, local, and industry resources during hazardous materials emergencies, should they occur.

At the Grasselli plant, we are committed to the success of programs both inside and outside the plant that will increase public safety and environmental protection. One of the more important

aspects of a safety and health program is the communication of information necessary for individuals or groups to protect themselves from hazardous chemicals to which they may be exposed, a subject known as the right to know.

Du Pont supports Federal legislative efforts which will expand coverage of the OSHA standard to all employees. It will also provide emergency service organizations with information necessary for community protection, also to establish information offices whereby the public can review work place chemical information and/or establish guidelines for community preparedness action programs.

We believe this system will provide necessary information to all aspects of the community through logical sources. The system provides the components needed to support emergency response programs, which we also support strongly.

To end it, as the Grasselli plant begins its second 100 years, we are convinced we will be able to safely make our products for use by the photographic, detergent, and steel industries.

Thank you.

Senator LAUTENBERG. Thank you, Mr. Goughnour. I appreciate the cooperation I have gotten from both your companies, Dr. Tsu at American Cyanamid. I know that Mr. Sella is the chairman, I believe, of the executive committee of the Chemical Manufacturing Association. So he shares a lot of thoughts with us on how, as an industry, you and your colleagues cooperate with those of us from government who want to try to make the environment safer and the incidents fewer.

I was reminded by a highly skilled professional person that there are more like incidents than accidents because in the process, unfortunately, things happen and they occur with some, if not regularity, some frequency and the question is how do we continue to diminish the risk associated with any such incident. I'm pleased to see that both of you share a view on strengthening standards. I would have to ask each of you the same question about whether or not the Jersey standard and its right to know is one that you would encourage to be a prevalent standard throughout the country if we were to adopt national legislation.

Is the New Jersey standard fair, is it in your view excessive in terms of its requirements, or is it one that provides the right kind of balance between a functioning business and the environment in which we live?

Mr. TSU. Dr. Terenzi, who I introduced, he has been studying this whole issue and I would prefer to defer to Dr. Terenzi on this subject.

Dr. TERENZI. I guess I'm selected as the expert on right to know.

Senator LAUTENBERG. I hope you are, doctor, if you are going to offer testimony.

Dr. TERENZI. Here I am. I have other people who work in our department who are far more expert than I am but I do know the general field and what is going on. I think it's unfortunate that in New Jersey, worker right to know and community right to know were all combined into one bill. So that when we had the recent decision on that, the entire activity was stopped. I also believe that

the New Jersey community right to know contained many provisions which were not necessarily—which were redundant.

The information supplied to the community, for example, in the way of material safety data sheet, safety data sheets which carried the name of every single ingredient in that particular product on the label, may seem overly stringent on the one hand; on the other hand, did not require any information on birth defects or cancer or other chronic diseases and to me, that's less than satisfactory.

Senator LAUTENBERG. You are saying that it should have been expanded or that it was redundant and superfluous in its——

Dr. TERENZI. I'm saying there are some aspects of it which are more stringent but they don't get to the heart of the matter, that is, to get to the community what the information needs to be, what the hazards are, what the materials are, not in terms of long chemical names.

Senator LAUTENBERG. Aren't general warnings the most important? Warnings that say listen, this could be dangerous and without specifying whether it's dangerous to an embryo, to your eyes to your hearing, or to your respiratory condition? When we have a fire alarm box on the corner, we ring it regardless of where the fire is, how it originated and so forth.

Dr. TERENZI. You bring up a subject of emergency response, which is separate in some ways.

Senator LAUTENBERG. We are asking what information does the community have a right to have available? All of you work very hard to make sure that your workers are aware of risks; advising workers to wear a mask or protective clothing or gloves. It's quite a statement when you say don't go in this room unless you are wearing a lead suit, that tells a worker something.

In the community's case, if we say OK, only if you are pregnant should you be worrying about this, we really get to fairly complicated standards.

Dr. TERENZI. I think we agree, Senator. Let me give you a specific example that may make the point. When we had the Chemtrol fire, with the New Jersey right to know, with whatever thousands and thousands of material safety data sheets, which had listed all the chemicals on them from all the chemical companies, we have estimated that may take additional buildings onto firehouses and health county offices, all of a sudden, a fire like Chemtrol, which no one knows what is there or even if they did, the combination of things going up together, try to picture a warehouse full of material safety data sheets with all of this detailed information helping them. It's conceivable that it could but not likely.

Senator LAUTENBERG. I come out of the computer business and am familiar with data banks and random access to information. It's fairly quick. It's faster than the post office.

Dr. TERENZI. We are agreeing, I guess. What you need to know is whether it has got one leg, to quote one of Senator Moynihan's assistants here at lunch, recommending yes, you need to know that, one leg, two legs. What is the hazard and how do I approach it? And if we agree on that, the firemen, the community has the right to know that and they should be given that information and it should be given to them in a meaningful way and I think in some

areas, the New Jersey right to know, while seemingly more stringent, went beyond that goal.

Senator LAUTENBERG. To your knowledge, and I don't want to extend any of you beyond your direct experience, was the New Jersey standard as it was developed more strict than any other that you are aware of in any other State? I think it is. Was it burdensome, are you suggesting, doctor, that if it were observed to the letter, the standard, that it would create difficulties in operating?

Dr. TERENZI. It would certainly add a burden but I'm not suggesting that it's something that we could not comply with. But we would have to redo all the labels, we would have to redo all material safety data sheets and I don't agree that it's necessarily one of the most stringent. I think it has requirements in it which are seemingly more stringent, full disclosure of all materials, but I think having no requirements for any chronic illnesses or diseases, those are hazards not required on the label, is less stringent.

Senator, there must be dozens of bills out there, maybe more than dozens, and I think it follows almost mathematically that some of these are better than others and again, if we can agree, what we should strive for is the best, one that's workable and one that really protects the community and the people working with these materials.

Senator LAUTENBERG. The thing that I wanted to elicit here, you heard earlier testimony from the mayor of Linden, from the people in the community. Residents of the nearby communities said that they weren't aware of procedures for evacuation. These were not residents of that community, but they were residents of nearby communities.

There is information that you have within your company libraries that could be of value to the community that is often, I think, denied access based on, I think the acronym is CBI, confidential business information. On the other hand, I don't know what influence that has in protecting one's competitive position but certainly if it an be of value to the community, I think it ought to be available.

Would you generally agree with that?

Dr. TRENZI. Yes.

Senator LAUTENBERG. In 1978, Dr. Tsu, you had reported to the DEP on the chemical materials handled at your plant, that there was an item known as hydrogen cycanide, 100,000 pounds in storage. Do you know whether that's still there?

Mr. TSU. Yes. That operation has been discontinued for some years now and that is not there.

Senator LAUTENBERG. The materials——

Mr. TSU. The materials, yes.

Senator LAUTENBERG. I was interested because we now know, I guess you did then, that's pretty dangerous stuff. They use it to execute people. So I see in your statement that each of you presented that you have retained Stone & Webster to analyze the safety of storing hazardous sustances such as hydrogen cyanide. Mr. Goughnour, that was under administrative order——

Mr. GOUGHNOUR. Yes.

Senator LAUTENBERG. So not at all to diminish the effort, but it wasn't something that was initiated voluntarily, let's say. You vol-

untarily acquiesced, but it didn't initiate from within the company. You have recognized, I assume, that it is a good idea to perform these evaluations.

Mr. TSU. Yes.

Mr. GOUGHNOUR. We had both indicated that we had thorough process reviews under way, I think, before that administrative order to identify areas that we needed the improvement.

Senator LAUTENBERG. I note one thing, both of your companies take pride in your concern for safety, and so forth, but I guess it would be less than honest if we didn't admit in the privacy of this room that Bhopal changed everybody's thinking.

Mr. GOUGHNOUR. Very definitely.

Senator LAUTENBERG. Is that true?

Mr. TSU. It changed the whole chemical business, how we look at things, what we must do, standards we really want to have to achieve, no question.

Senator LAUTENBERG. And there is no doubt that I think equity prevails when everybody operates under the same conditions, under the same safety requirements, under the same essential requirements. I'm not talking about marketing design, I'm talking about safety.

If everybody is meeting the same standard, then the competition is fair and equal. But if one State has a less stringent law than another or one country has a less stringent law than another, then companies are disadvantaged. We don't want to see that happen.

Dr. Tsu, earlier the witness from Union Carbide suggested that we rely on OSHA to monitor chemical releases. Do you agree?

Mr. TSU. OSHA monitoring chemical——

Senator LAUTENBERG. The OSHA standards.

Mr. TSU. For environmental protection, health, hygiene?

Senator LAUTENBERG. Yes.

Mr. TSU. Our position, Senator, is that I think we should have a uniform standard, not, as you just implied, a patchwork, guiltwork of diverse standards which would create unfair situations. So our position is a national standard, a rational national standard that is equitable for all parties.

Senator LAUTENBERG. That's the good name for a bill, a rational national standard. So that you are not suggesting that the OSHA standard, the OSHA supervision is necessarily sufficient, you are saying find a system that is rational, that is applied universally.

Mr. TSU. Yes. I might add, Senator, that as a general rule of thumb, I feel that what we make known to our workers concerning hazards should be made known to the community, also.

Senator LAUTENBERG. Do you share, each of you, Mr. Goughnour, Dr. Tsu, do you share with the community all of the safety information that you have distributed internally with the——

Mr. GOUGHNOUR. Not as complete—how do you describe "completely"?

Senator LAUTENBERG. If you are alerting people in the plant that in the event of a release can't you share the safety procedures that you use internally with the community? Do you share, through the municipal government, that information?

Mr. GOUGHNOUR. That information doesn't go to the entire community. I think we indicated earlier that we work closely with the

Linden Fire Department and conduct practice drills with that organization.

The communication of that information in detail on the chemicals in the plant would generally come through that organization. As far as products are concerned, we definitely communicate all the safety information necessary.

Senator LAUTENBERG. And the safety information——

Mr. GOUGHNOUR. As far as handling our products.

Senator LAUTENBERG. And what to do in the event of an accidental release?

Mr. GOUGHNOUR. Absolutely.

Senator LAUTENBERG. How do each of you feel about the industrial survey to tell us what is on premises, toxicity, et cetera?

Mr. GOUGHNOUR. We are replying to that now. You are referring to what Representative Florio referred to?

Senator LAUTENBERG. Yes.

Mr. GOUGHNOUR. Yes, we are cooperating and replying to that.

Senator LAUTENBERG. It's a good idea to have that kind of requirement, do you think?

Mr. GOUGHNOUR. I'm sure it is.

Senator LAUTENBERG. Dr. Tsu.

Mr. TSU. I'm sure it is, too.

Senator LAUTENBERG. Your companies would be willing to do that, certainly.

Mr. GOUGHNOUR. Definitely.

Senator LAUTENBERG. I thank both of you, each of you, all of you. I just want to ask one question of the medical experts with you. You talk about surveillance in Cyanamid's program, medical surveillance. You said under 40, it was biannual and over 40, it's annual. What do you look for? Do you look for chronic disease, frequency of respiratory problems?

Dr. UTICAN. We consider it to be a comprehensive medical examination which consists of, you might say, three parts. One is a history. In the case of ongoing surveillance, that would be an interim history, medical history, which recently has been computerized, and it involves a very large number of questions getting into each organ system of the body specifically.

Then in the clinical examination, apart from the hands-on clinical examination by the physician, they use the stethoscope and the other instruments with which you are familiar, we also perform certain physiological tests. For example, we perform spirometer or pulmonary function tests on our employees. They very specifically address the issue of the possibility of chronically developing respiratory disease. We consider there is a hazard of that in general in industry and then there are certain chemical laboratory tests which are conducted, blood tests, urinalysis, and so on and so forth.

These are somewhat similar to what you might get from any doctor's office, but we have some additional tests which are specific to our particular processes or exposures. I might mention we have been collaborating with the Albert Einstein Institute of Neurotoxicology in the Bronx for the development of what we feel is a very sensitive test for early detection of neurotoxicity of one of our products and that's not the kind of test you would find in a normal doc-

tor's office and which we use to monitor workers in handling one of our specific products.

The analysis of these results of this periodic testing on an ongoing basis is designed to provide early indications of any development of chronic disease of any kind.

Senator LAUTENBERG. Is it fair to say that in your view, without soliciting precisely a professional opinion, that the health of those working in chemical plants is not essentially different than those employed outside the industry?

Dr. UTICAN. That is our finding because if you study occupational health studies in general, in the last 10 years, in particular, and I mean epidemiologic studies which analyze specifically and based upon large numbers of individuals, you will see the term very commonly used nowadays, the healthy worker effect, and this is a reflection on the fact that industrial workers in the vast majority of industries, not absolutely all, but the vast majority of industries, including the chemical industry, actually enjoy superior health status to the overall population and the reason for this is that by the virture of the fact that our employees are fit enough to be in regular employment separates them out somewhat from the total population of the country.

It's not something that we can congratulate ourselves that we are promoting health but the state of being gainfully employed in this country is associated with best health than the overall population where there is a large number of people who are unemployed.

Senator LAUTENBERG. But then how about the results in the improvement of the health condition as a result of preventative measures, again, masks and so forth, does that help protect the health of your workers, the safety procedures?

Dr. UTICAN. It certainly does but I think the fact that our workers are receiving regular medical surveillance puts them in a privileged position relative to the total population.

Senator LAUTENBERG. So is it fair to, then, conclude that the people in the community who aren't as aware, who aren't as well trained to deal with particular materials, might have a considerably higher risk from exposure?

Dr. UTICAN. No; I think again, if I gave that impression, I didn't intend to do so.

Senator LAUTENBERG. Please continue.

Dr. UTICAN. People in the community, if their health is on the whole, and I'm speaking statistically now, inferior to that of the plant workers, it has a lot to do with employment status, regular employment, income, and so forth. We have to remember that out in the general community, there are the chronic indigent and people whose social conditions are substandard and——

Senator LAUTENBERG. This will, you will forgive me, doctor, this will develop into quite a dialog here if we talk about the general condition of the worker. There is the——

Dr. UTICAN. I wanted to correct the impression that you are suggesting that people in the general community may be less healthy because they don't wear respirators at all times. Our employees wear respirators very seldom and under very special emergency situations. There are very few jobs that require the use of regular respiratory protection within our plants. This is in compliance with

the OSHA philosophy in maintaining a healthy work place with respect to toxic chemicals.

Senator LAUTENBERG. You study the OSHA rules fairly closely, doctor?

Dr. UTICAN. Yes, I do.

Senator LAUTENBERG. Would you say that compliance to those rules adequately protects all the people who work in environments that could be described as of concern, I don't want to use the word hazardous, but something in between of concern and hazardous?

Dr. UTICAN. I think there are specific OSHA regulations that are adequate. Of course, there are chemicals that we use and other industries use which are not OSHA regulated and here we impose upon ourselves the task of setting equivalent standards.

Senator LAUTENBERG. Thank you, sir. Thanks very much, gentlemen. I'm sorry we delayed you. Your testimony was excellent and I appreciate the cooperation.

Please join us. Mr. McGraw, Mr. Daggett, Don Clay, Dr. Matheson. We have to squeeze people in here. Dr. Houk, Dr. Rall, Mr. Bierbaum.

We are going to hear testimony from EPA Assistant Administrator Jack McGraw; from OSHA, Jane Matheson is the Deputy Assistant Secretary of Labor for OSHA; and Dr. Vernon Houk, Assistant Administrator of the Agency for Toxic Substances and Disease Registry, and when you make your presentation, if you want to present those who are accompanying you, please do so. Mr. McGraw, I think we will start with you.

STATEMENT OF JACK McGRAW, ACTING ASSISTANT ADMINISTRATOR, FOR SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY

Mr. MCGRAW. Thank you Senator, I have with me a couple of individuals I want to introduce. In case you want to go into more detail, we have specialists here to be able to answer any questions. They are: Christopher Daggett, Regional Administrator from region 2, Don Clay, the Director of EPA's Headquarters Office of Toxic Substances Jerry Emison, from the Office of Air and Radiation we also have backup staff with us, Bill Labrizzi and Fred Rubel from EPA's region II office which has actually worked some of the incidents of the recent months and also the project leader for EPA's Bhopal task force, Jim Makris.

I would like to, submit the full report for the record and take this opportunity to summarize some of the highlights of our testimony. We especially want to commend you for bringing together this group today to deal with this issue. I would like to use this event as an example of the complexity of the issue that we are all facing.

The fact that the vast variety of people that you have present and scheduled as your witnesses today certainly exemplifies the complexity of this particular issue; each of these groups have their own particular role in dealing with chemical safety and with emergency response. You and staff have certainly recognized this by the fact that we have both the legislative branch and the executive branch represented as witnesses here; the judicial is not represent-

ed but certainly they play a vital role in carrying out these laws. We have had witnesses today who cross-cut the State, and represent various State programs. The State legislature is also represented here this afternoon, so therefore all elements of State government, as well as local government an represented. You have also had a fire chief, and the local emergency response people, local citizens, mayors, local officials, and so forth represented today.

Further, you have had industry officials, looking at the total complexity of the issue along with private citizens. The main point that I am emphasizing is that ever since the administrator appointed me to be the coordinator within EPA to pull together both our own agency and some of the other Federal agencies involved regarding whether or not a Bhopal incident could happen here, the notion that struck me most is that no single individual or single entity is responsible. From the legislative right on through to private citizens, there is a full responsibility on all elements to be involved in local community activities, the passage of local ordinances, and exerting appropriate pressure on local officials to get the emergency response programs in place to be able to respond and support those facilities.

So one of the major themes that I wanted to highlight is the fact that every entity of our society, and especially the private sector has a very vital role in seeing to it that there is a safety in this infrastructure and that it works together. It's almost like a jigsaw puzzle that has to be made to fit together before we can see the total picture. As good as this system is, I think it's appropriate that all levels of government, and especially State and local governments, begin to address these issues with a great deal more fervor than we have in the past. Any existing system can certainly be improved upon and so that the likelihood of any such incident as Bhopal would be greatly reduced.

We at EPA are undertaking a thorough review of the preventative measures, including the legal authorities existing in this country, to minimize the risk of a similar tragedy and we have looked at a number of our own authorities as well as those of other Federal agencies. Again, the scope of this problem is a very complex one. While EPA is continuing to deal with issues related to chronic releases of hazardous toxic substances in both preventing and responding to these releases, the issue of episodic releases of hazardous substances has been addressed primarily around the response activity.

A number of Federal authorities and response systems are in place to deal with these issues. The most single important authority that we have to be able to deal with emergency response law is the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, known as CERCLA, or the Superfund Act. This gives us authority to respond to immediate threats to human health in the environment. It also provides us a mechanism to draw together all the Federal agencies that are involved in both the prevention, mitigation and a response to such an incident.

A major piece of regulation under Superfund that we follow, one that is referenced and mandated in the act itself, is the national contingency plan. This is a plan that pulls together 12 Federal agencies at the national level to deal with planning and with policy

development and to also deal with prevention as well as response to a particular incident.

The primary vehicle in the NCP for carrying this out is the national response team. Again, this is a group that is made up of 12 agencies. The NRT has met several times to deal with the specific aspects of all of our authorities in response to the Bhopal-type of incident. Everybody in this continuum has their own responsibilities. As has been pointed out, OSHA has the responsibility in the workplace, for example, and we have information to exchange with OSHA. While they are working within the workplace, if they do their job and their laws and regulations are properly applied and work well, then that certainly would reduce the possibility of any kind of release of any toxic element into the environment offsite.

So it's a chain of various authorities; they deal within the workplace, and we deal more with the outside in the broad context of the environment. Everybody has their own particular piece of this continuum.

At the State and local level, the regional response teams, which are made up of the same Federal agencies as are the NRT and also include the States—and oftentimes local governments—a major part of the response team.

Under Superfund, I think it's important to note that the response network can evacuate an area, take measures to stop a release and clean up any contamination. The national response team pre-Bhopal, and I'm glad to state that one time we were ahead of the power curve, had established a preparedness subcommittee to deal with and assess the State capabilities and the regional capabilities; to determine how we would respond in hazardous substance accidents. That effect is well underway.

Senator LAUTENBERG. How long would it take to complete that study?

Mr. MCGRAW. It's fairly exhaustive. We are also working with an advisory counsel made up of the number of industries. Again, this is not something that is segmented. We have numerous Federal agencies involved. As you witnessed here today, we have numerous State and local agencies involved in this planning effort. Also, the private sector has a substantial infrastructure that deals with medical safety and response plans.

Preliminary conclusions from this study are expected by June of 1985. But it is one that is underway and that I think deserves our continued attention.

We have also taken a look at a number of our legal authorities. I have submitted in my testimony a breakout of a number of various sections of the EPA laws. However, I would say basically, in addition to these authorities that are in OSHA, DOT, Federal Emergency Management Agency, Department of Justice, and other agencies, we have also looked internally. There are basically four types of authorities that are examining and they would be categorized as information gathering activities, emergency response authorities, or prevention authorities, followed up with the necessary enforcement authorities that we have to carry out our program.

In addition to the activities that we have at our headquarters, Chris Daggett would be glad to discuss any of the initiatives now

underway in the new Jersey/New York area, such as the actions with the Staten Island survey.

In fact there is a great deal of activity going on in this area and Chris can discuss those later, if you want. I would also point out that last week, Lee Thomas, the EPA Administrator, signed a rule and a companion notice of proposed rule making that dealt with the reportable quantities issues. This is the basic reference about spills and releases, and when they should be reported to the National Response Center.

We now have almost 700 listed as reference chemicals that have specific reportable quantities of 1 pound, 10 pounds, 1,000 pounds and some of them even up to 5,000 pounds.

Let me emphasize that the purpose of the designated reportable quantity is not in any way to address a risk relative to a particular release. It is primarily to say that somebody ought to be notified that there may be a need for an emergency response. In many of these situations, we do send a team out and to look and determine whether or not the spill was cleaned up adequately. In some cases, as occurred here last week with the Middlesex explosion, we actually send our response team out. We were there within an hour and a half of the event to assist the local officials. We had both our emergency contract people as well as our environmental response team on the scene working with the local officials, State Police and others to assist.

Senator LAUTENBERG. Is it a possibility that any of those threshold levels for an alert are above the general safety level for the community?

Mr. MCGRAW. The idea is that if anything gets above that designated level—a notification is essential to assure that the situation is assessed.

Senator LAUTENBERG. You said that that didn't necessarily indicate a danger zone.

Mr. MCGRAW. No, it's not tied to a risk per se, rather it's tied to a general potential risk to the community.

Senator LAUTENBERG. Then you are saying it's not tied to a risk per se.

Mr. MCGRAW. It's not specifically a health assessment or that type of thing. It's stating if this quantity gets out into the community, it needs some kind of response or notification to public authorities. Whether it results in a response by the industry itself or by a local fire department or in some cases, as we have indicated, by some of the Federal staff, some investigation of the appropriate action is essential.

The last point I would like to highlight is that you have heard a great deal of interest expressed today on the passage of community right to know legislation. We have followed this with a great deal of interest and have taken steps to study it in more detail. We have been watching very closely the activities of Monsanto and others that are going on the public record, to support disclosure. I noticed today we have a number of other industries that have gone on record saying they are in support of a right to know. As previously pointed out, there are a number of different types of legislation on right to know.

There are several States or localities that already have some type of right to know, some of which have been successful while some have not been so successful. I would think that we will carefully look and see what the experience has been of those who have tried it here and abroad and see where the pitfalls are. We certainly intend to continue to follow this concept with a great deal of interest and to better understand the full implications of it. I think it's important that the citizens and the community know what they are dealing with, whether it's in preparation for an emergency reponse or whether or not you are deciding to live in a given community.

Senator LAUTENBERG. You said right to know?

Mr. MCGRAW. Yes, community right to know.

Senator LAUTENBERG. Is that your terminology? Because in your written statement, you said we believe that citizens have a responsibility to become more informed about potential threats from their chemical plants and appropriate steps——

Mr. MCGRAW. In order to be informed, there has to be a mechanism to make that available to them.

Senator LAUTENBERG. I agree, but, in your written testimony. the finger of responsibility is pointed at the citizen. I guess if we gave everybody a terminal and software training and operator's training. they could get the information to discern risks on their own. I think maybe there is a juxtaposition of where the responsibility lies; everybody has the responsibility to protect themselves.

Mr. MCGRAW. I don't think we as individuals can just sit back and assume somebody is going to take care of this. I think as individuals we have to be able to assume some level of responsibility. If we live in a community, we ought to know what are some of the emergency procedures and action plans. Equally however, the local government as well as the local industry should make that information available so that the the individuals will know how to repond. Some of this, as you know, has been done on a voluntary basis and other actions have been mandated by statutes. So it is one area that we would hope to continue to explore with you.

In closing, I would like to reiterate that we will be working closely on all these efforts with other Federal agencies and with the Congress, State, local governments, industry groups, associations, individual companies and environmental groups, citizens, and others to find out how we can address some of these problems.

This concludes the opening remarks that I have. We would be glad to repond to any questions that you may have.

Senator LAUTENBERG. We appreciate it. We will hear from other members of the panel.

I would ask Ms. Matheson, who is, again, the Deputy Assistant Secretary of Labor for OSHA, we are pleased to have you with us and please go ahead with your remarks.

STATEMENT OF JANE MATHESON, DEPUTY ASSISTANT SECRETARY OF LABOR

Ms. MATHESON. Thank you, Senator, for the opportunity to discuss OSHA's role in the chemical industry. With us today is John

Miles who is the director of field operations for OSHA's enforcement efforts.

The Occupational Safety and Health Act of 1970 gives OSHA broad authority to promote on-the-job safety and health. That authority extends to private sector employers with one or more employees but does not extend beyond the work environment. It allows OSHA to set work place safety and health standards, conduct inspections to enforce the standards, issue citations, propose monetary penalties and require abatement within a stipulated period of time. Also, the Act provides for training and education programs and encourages cooperative programs to reduce work place hazards.

There are a number of OSHA standards applicable to potential hazards in the chemical industry. Among these are standards setting exposure limits for 400 to 500 toxic materials, standards for respiratory protection and use of protective equipment, standards for flammable and reactive liquids, standards for the design, installation and operation of storage tanks and standards for fire protection and emergency evacuation plans.

OSHA may also rely on the general duty clause of the Occupational Safety and Health Act when: there is no applicable standard, the hazard is clearly recognized by the employer or its industry and presents a probability of death or serious harm to employees, and abatement is feasible. In the chemical industry, for example, the general duty clause has been cited when the employer failed to provide a properly sized pressure release system for a tank, thereby exposing employees to potential hazards of vapor inhalation and serious burns. In another instance, a general duty clause was cited for an employe's having failed to follow the company's own operating procedures and enforce company training programs.

For the thousands of chemicals in the work place today, OSHA has promulgated a hazard communication standard, which requires the creation of information, in the form of labels and material safety data sheets, to inform employees about chemical hazards in their work places and the health effects anticipated from those toxic chemicals. It requires chemical manufacturers and importers to provide this information both to their own employees and to industrial users of their products by this November. Most importantly, the standard also requires that training be provided so that employees can know not only what the hazards are, but what to do about the hazards and any exposures they might have to them.

Whereas OSHA's Hazard Communication Standard requires the creation of new information about chemical hazards in the work place, OSHA's Medical Record's Access standard requires the provision of existing information about employee exposure to toxic chemicals. The access standard requires employers to maintain and preserve exposure and medical records of employees' occupational exposures to toxic substances or potentially harmful physical agents and to see that employees, their representatives and OSHA also have access to pertinent exposure records. Such records include air monitoring results, biological monitoring results, material safety data sheets and any other record which reveals the identity of a toxic substance. OSHA's access rule provides a means for in-

forming employees of possible hazards associated with chemicals used in their workplaces.

To enforce the Occupational Safety and Health Act, OSHA conducts periodic unannounced inspections of workplaces. During fiscal year 1984, OSHA conducted some 70,000 inspections. Based on its inspectors' findings, OSHA can issue citations to employers and propose penalties. Moreover, OSHA can require employers to correct hazardous conditions within a given time. If there is an imminent danger and the employer fails to correct the hazard promptly, OSHA can seek a restraining order from Federal district court and obtain an immediate shutdown of the hazardous operation or section of the workplace where the imminent danger occurs.

OSHA uses two approaches in sending our inspectors to investigate workplace hazards. The first is an unprogrammed approach in which we respond to reports of alleged hazards. Thus we investigate complaints, referrals, fatalities or catastrophes, and reports of imminent danger. The second is a programmed approach in which we determine from available data the industries where hazards are most likely to be present. OSHA targets its safety inspections to industries in the manufacturing sector with lost workday injury rates higher than the national average for all industries. Lost workday injuries are those which are normally going to be more serious because they involve time off from work. In 1983, the national lost workday injury rate for all private sector establishments was 3.4 lost workday injuries per 100 employees. For the manufacturing——

Senator LAUTENBERG. Is that annually?

Ms. MATHESON. Yes, that's for the entire year. For the manufacturing sector, that rate was 4.3 and for chemical manufacturing, 2.4.

Since OSHA's high hazard targeting list for safety inspections in the manufacturing sector is based on State lost workday injury rates for subcategories of industries, some chemical manufacturers nevertheless are targeted for OSHA's safety inspections but many, because of their good safety records, are not. They are, however, targeted for health inspections, which are established by reviewing OSHA's previous inspection findings within standard industrial classification codes and rank ordering those by a worst first type of list for health inspection targeting.

The chart which accompanies my prepared statement—that you have in the lengthy statement—shows the high inspection presence that OSHA maintains in the chemical industry. In the industry as a whole, there are about 11,000 firms nationwide, an estimated 6,700 of which are under Federal OSHA coverage and approximately 4,300 are under State plans, where OSHA enforcement activity is done by an approved State plan. In fiscal 1983, Federal OSHA inspected 1,450 chemical manufacturing plants or more than 1 in every 5 such establishments under Federal coverage.

To put that in perspective, that same year, Federal OSHA inspected 1 in every 40 of all the establishments it covers in the United States, 1 in every 6 manufacturing establishments and, in 1 specific industrial organic chemical standard industrial classification code, more than 1 in every 4.

In New Jersey, where there are about 900 chemical manufacturing plants, OSHA has been inspecting about 1 in every 3 such plants each year.

The committee has expressed an interest in recent chemical leaks and spills in New Jersey. While the Occupational Safety and Health Act, does not require employers to notify OSHA of leaks and spills, the agency can investigate such incidents when they are brought to its attention and when employees are potentially exposed. (OSHA's regulations do require notification to OSHA in certain circumstances, such as where a fatality has occurred or there has been a hospitalization of five or more employees. We also require reporting with regard to certain comprehensive health standards, for instance, the standard for 13 identified carcinogens, where there has been a leak or spill of one of those enumerated chemicals.) For example, a major chemical release occurring here in New Jersey on January 21, 1985, at the American Cyanamid Warner's plant involved potential exposure to dimethoate solution. Acting on the basis of media referrals, OSHA arrived at the plant to conduct an investigation. We are reviewing the details of the incident. We have examined the operation process, emergency procedures, protective equipment, maintenance procedures, and employee training. We have interviewed representatives of management and labor and met with officials of the New Jersey Department of Environmental Protection. At present, our area office is evaluating the information gained during this inspection, and if it is necessary that enforcement action be taken, we will do so.

In the past several years, OSHA has investigated many incidents in the chemical industry in New Jersey. For the 5-year period 1980–84, OSHA has conducted approximately 6,000 inspections in the chemical industry nationwide and 1,552 of these, or more than one-fourth, were conducted here in New Jersey chemical plants.

In the past few months, in addition to our investigation of American Cyanamid's Linden plant, OSHA has been investigating leaks and spills at the Colgate-Palmolive facility in Jersey City, the Industrial Chemical Corp. in West Milford, the Essex Chemical Corp. in Newark, and the J.B. Meyers Corp. of Moonachie. If the committee wishes, we would be happy to provide details of these investigations.

The recent disaster in Bhopal has sharply increased the awareness of everyone to the potential hazards to employees of chemical manufacturing plants and to the people who live in the vicinity of such plants. I would like to describe briefly some of the steps that OSHA took following the tragic incident at Bhopal. We have now inspected every facility which manufactures or uses MIC (methyl isocyanate) in significant quantities. There were five such plants, one in Institute, WV, you heard testimony about today.

Because of the Bhopal disaster, all production of MIC had been discontinued at the West Virginia plant prior to OSHA's inspection. We are aware that Union Carbide has decided to resume production of MIC in a few months and OSHA has been invited by Union Carbide to a briefing in advance of that production and we will attend. OSHA will be on hand at the time of startup to monitor startup operations.

Senator LAUTENBERG. Did they agree to any schedule for advanced warning or was it just advanced sufficient to——

Ms. MATHESON. I do not know if specific dates have been mentioned, but due to cooperation afforded to all Federal agencies involved, I'm sure we would have enough time to look at their materials and make an assessment if we need to.

Senator LAUTENBERG. In your comments, you said within a few months and actually now we are talking about weeks, really. OK.

Ms. MATHESON. Great care and much time was expended on each of the five inspections which began in early December 1984. In each case, we began our inspection with an extensive review of relative documents maintained by the employer. Our inspectors also reviewed the MIC related processes involved at each work-place and examined in great detail the engineering and administrative control measures taken. For example, we have looked at controls such as caustic neutralization tanks, neutralization scrubbers, process thermal oxidizers and ways to prevent and control uncontrolled reactions of MIC.

We have also checked to determine whether plant personnel from top management to line employees adhere to detailed, clearly established operating procedures for all MIC operations, such as proper, safe work practices, effective preventative maintenance programs, employee training in job hazards and carefully prepared emergency response procedures to be followed should a reaction, leak, or spill occur. A complete report of these inspections has been prepared and may be provided to the committee.

Generally the agency found that industry practices to prevent, control and neutralize an uncontrolled MIC reaction were sufficient because they rely on the redundancy of backup safety systems—one backing up another, in turn backed up by a third and in some cases a fourth system—and on the professional implementation and maintenance of such redundant backup systems. As to spills and leaks and areas covered by the OSHA MIC inspections, all companies had developed and implemented practices aimed at neutralizing MIC and preventing its passage into the ambient air. A few deficiencies were observed by OSHA in certain instances. There was not complete conformance to what we believed was the prevailing industry practice, and the agency issued appropriate citations alleging violations of the Act. After studying and analyzing the report on the causes of the Bhopal disaster, we will reexamine our conclusions and plan for any needed reinspections that may prove warranted.

We can say at this point that the industry has identified the necessary engineering control measures and implementation to ensure that the possibility of a catastrophic release of MIC from an uncontrolled reaction is extremely remote.

Since its inception in 1971, OSHA has been working to reduce potential occupational exposures to hazardous spills or leaks inherent in the large scale production of chemicals. We will continue to do so by enforcing our standards, offering consultative advice and other technical assistance, and promoting training, education and other voluntary cooperative programs. Our experience leads us to conclude that only by a concerted effort involving the private sector as well as government can we insure that the best job possi-

ble to contain chemical hazards in the work place is being accomplished.

Thank you and we will be happy to answer any questions that you may have.

Senator LAUTENBERG. Thank you. Ms. Matheson. If you would sit tight. We have one more witness. there are several questions I would like to ask you. Thank you for your testimony.

Dr. Houk, we have met under similar circumstances many times. I rely on you, as always, for your good, direct professional view and invite you to go ahead with your testimony.

STATEMENT OF VERNON N. HOUK, ASSISTANT ADMINISTRATOR, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Dr. HOUK. Thank you, Senator. I am Vernon Houk, assistant administrator of the Agency for Toxic Substances and Disease Registry and Director of the Center for Environmental Health of the Centers for Disease Control. Accompanying me today are Dr. David Rall, Director of the National Institute of Environmental Health Sciences and the National Toxiocology Program, and Mr. Philip Bierbaum, Deputy Director of the Division of Surveillance, Hazard Evaluations and Field Studies of the National Institute for Occupational Safety and Health.

We appreciate the opportunity to discuss with you today the Public Health Service's activities under the Superfund Program, particularly with respect to our ability to respond to emergency releases of toxic substances, toxicology testing in support of Superfund and steps to protect the workers manufacturing hazardous substances and those responding to emergency release of hazardous substances.

Under the current Superfund Act, the Agency for Toxic Substances and Disease Registry is responsible for carrying out a wide variety of health related activities in cooperation with the Environmental Protection Agency, other public health service and State agencies. Critical parts of this program include efforts to determine danger to the public health from a release of a hazardous substance and consultation with private and public health providers about the medical care and testing of exposed individuals in emergency situations.

During the past 3 years, we have provided nearly 1,000 Superfund emergency or immediate removal site consultations to the Environmental Protection Agency, the U.S. Coast Guard, and State and local health departments. On some occasions, our assistance has been simply to provide telephone consultation. On other occasions, we have sent physicians and other public health specialists to the site to determine if other health studies are needed or desirable.

Emergency response activities provided under Superfund are comparable to all other national and international emergency response actions under other authorities by Public Health Service. The Centers for Disease Control is the lead agency for the Public Health Service. CDC has a long history of providing epidemiologic, medical, laboratory and other assistance in environmental and occupational emergency situations, such as Three Mile Island, the

eruption of Mount. St. Helens and the recent event in Bhopal, India, as well as in infectious disease outbreaks.

Under Superfund, we are usually notified of an emergency by EPA or the Coast Guard, whichever is designated for responding. However, the first notice and request for assistance may come from State or local health agencies, private medical providers or other sources. Through whichever route notification comes, procedures are in place to insure coordinated health assistance on Federal, State and local levels and to ensure notification of other Federal agencies needed to provide other assistance. We have assigned public health advisers to EPA regional offices and they have been instrumental in assuring our active participation in toxic emergency responses and in effectively coordinating our activities with other Federal agencies, as well as with State and local governments. We play an active role on the regional response teams, standing organizations representing 12 Federal agencies to bring a wide range of technical assistance to any emergency situation.

A good example is the recent release of malathion at an American Cyanamid plant in New Jersey. ATSDR first became aware of the release on October 6, 1984, when contacted by the National Oceanographic and Atmospheric Administration scientific support coordinator for the Coast Guard. The first information received was that there had been a fire and a major release of malathion, sending a cloud of malathion into the air.

Conversations among us, the New Jersey Poison Information and Education System at Beth Israel Medical Center in Newark, and the emergency room of the JFK Hospital in Edison, NJ, established that exposed residents of the nearby area and crewmen of a nearby ship had been taken to the hospital and that appropriate treatment was being provided.

In addition, by early afternoon, we became certain that we knew the exact nature of the release; that is, at what stage of the production it had occurred, and felt that all acute symtomatology would occur within 24 hours. We therefore elected to keep our toxicological team at Atlanta continuing very open communications with New Jersey so that in the event something happened, they would not be in the air when needed.

Approximately 4 days later, we were asked to review the environmental sampling results. Two days later, on October 12, we informed the Coast Guard that there was shown no evidence of a hazard to public health and that the levels of pesticide found were well below any level requiring action to avoid adverse health effects.

We were able to render that judgment because in this instance, there is a body of well documented scientific information on the health effects of malathion. Malathion is capable of causing acute effects, primarily respiratory, as it did in this case. However, the effects are of short duration. One brief exposure, at levels experienced in this incident, should cause no long term effects, as would be the case with methyl isocyanate exposure that occurred in Bhopal, India. In fact, as was noted during the event, those persons who did not have effects by late that afternoon or within roughly 4 hours after that exposure would not be expected to have them. Chronic effects can appear in humans if malathion is absorbed in

sufficient amounts, amounts very much above any that could have been received during this incident. Small children and people with various types of illnesses are more suspectible to the substance but again, the levels of exposure experienced during the incident were not sufficient to cause toxic effects, even in these more highly susceptible groups.

But we have been involved in many of the inactive hazardous waste sites in New Jersey. We have not been involved in any other emergency releases in New Jersey. Some sites in the populous northern New Jersey area have potential for release of a toxic cloud due to fire, explosion or chemical incompatibility. We are working with EPA region 2 and the State to identify these sites and provide technical assistance as EPA considers them for immediate removal action under Superfund.

Toxicology testing is an integral part of the Department's Superfund Program. This testing is conducted by the National Toxicology Program, established in November 1978 by the Secretary of HHS to integrate HHS programs concerned with the tocicity of chemicals and to strengthen the interchange among all involved agencies.

The four specific goals of NTP are to one, broaden the spectrum of toxicologic information obtained on the chemicals selected; two, increase the numbers of chemicals tested; three, develop and validate a series of tests and protocols appropriate for regulatory needs; and four, communicate plans and results to governmental agencies, the medical and scientists communities, and to the public.

The NTP brings together the relevant toxicological testing programs of the National Institute of Environmental Health Sciences, the National Institute for Occupational Safety and Health and the National Center for Toxicological Research. Through its executive committee, made up of representatives from the health research and regulatory agencies, NTP provides a mechanism for nomination of chemicals by all interested parties and the selection of chemicals to be tested. Persons or groups outside the Government can also nominate chemicals.

The results of NTP tests are peer reviewed by nongovernmental scientists in open meetings attended and the results are issued as NTP technical reports.

With Superfund, the Public Health Service called upon NTP to conduct testing of chemicals found at Superfund sites. The department sought from EPA information on the frequency and amount of chemicals found at Superfund sites and established in interagency committee to evaluate the gaps in information about the health effects of priority chemicals found at Superfund sites or in connection with emergency releases. These Superfund priority chemicals are then nominated for testing.

Using Superfund resources, testing for six priority chemicals has been completed, six others are being tested, and seven additional chemicals are scheduled for testing during this fiscal year.

Finally, I would like to comment on protecting workers at hazardous waste sites and in emergency situations. As part of our department's efforts to implement the health provisions of Superfund, NIOSH is involved in studying and attempting to mitigate the effects of heat stress from worker protective clothing and in testing the protective efficacy of worker clothing and respirators.

In addition, during the past year, NIOSH has provided training for over 600 Federal, State, and local officials in state of the art safety and health practices for cleanup of hazardous waste sites and spills and the Institute plans to provide an equal amount of training in this year.

NIOSH is an integral member of the public health team providing assistance in toxic emergencies. NIOSH provides industrial hygiene and medical expertise to evaluate health effects to current workers and to workers involved in the cleanup and to assure that the workers are provided protection.

Mr. Chairman, that concludes my statement. Dr. Rall, Mr. Bierbaum and I would be happy to answer any questions you may have.

Senator LAUTENBERG. Thank you, Dr. Houk. I would like to proceed and ask each of you specific questions and I would urge that if you think that you have a differing point of view, to please feel free to indicate that you would like respond.

Mr. McGraw, I wanted to examine one part of your testimony because it starts off with the board question of responsibility. One of the things that seems to plague us, and it has been mentioned several times by several members of the panels, that we often get into jurisdictional disputes or at least differences of view as to who is in charge and I was struck by a comment in your written testimony that I don't think I heard you repeat as you offered it orally. "We must keep in mind, however, that episodic chemical releases are normally local in nature and require the same types of local response authorities as would be activated for a fire or other emergency." It goes on to say, "They are not inherently Federal responsibilities." Certainly it's an accurate quote as I read it here.

Whose responsibility is it when a cloud of hazardous materials from a State to the west of us comes over one of our communities or a cloud leaves one of our communities and covers Staten Island, our nearest neighbor to the east, whose responsibility is it when perhaps different standards exist for either a right to know or for emergency response? Isn't there a imperative role for the Federal Government? TSCA, RCRA, the laws governing transportation of hazardous material, aren't Federal regulations developed because it isn't sufficient to leave to the local jurisdiction?

Mr. MCGRAW. Let me respond to that. First the biggest part of my Federal career has been in emergency planning and emergency response. I don't know of any emergency response activity that is not initiated locally and when the first responder is not primarily the local government, whether that be a fire, a hurricane, a flood. The continues right down to the point of planning in response to the nuclear attack. That's the context in which the statement is made that it is normally local government that responds in emergencies. So this is a response statement.

That in no way indicates that there is no Federal responsibility in the overall picture. Just as I indicated, the first responder to an incident are the people that are the closest to the incident itself. There is a sort of backup mechanism where if they need help, as you heard indicated earlier, they have mutual compacts where they bring in response staff from the fire departments in other areas and as the situation or threat gets larger, it could go inter-

state. There is Federal support to a response. We have 90 million dollars in superfund to be able to deal with the emergency where we can send predesignated contractors designated across the country to go and assist the local government in such emergencies.

Senator LAUTENBERG. Does the degree of assistance depend very much on local capability?

Mr. MCGRAW. Yes, very definitely.

Senator LAUTENBERG. So if it's a backup team, it often becomes the first line of response falls to the local capacity.

Mr. MCGRAW. Maybe we need to give a specific illustration. It's very difficult for the Federal Government to be a first responder to anything. We can, however, be close behind. I think as we have indicated, in Middlesex last week, we had our Environmental Response Team here within an hour and a half already with air monitoring systems set up.

Senator LAUTENBERG. If you are getting people to Middlesex County in an hour and a half, have you overstepped your bounds, have you observed your responsibility, or have you failed to respond adequately?

Mr. MCGRAW. We worked with the State. It wasn't that we came in and usurped the local responsibility. It was clear from the beginning that State and local were the responsible responders and did a good job. But I think the Federal role in an emergency response situation for the most part is in technical support. We sometimes have the equipment, and the technical know-how to be able to deal with very specific types of chemicals.

I think one of the biggest emergencies referenced earlier to this morning was a train derailment that occurred a couple of years ago in Louisiana. It's interesting to note that that was a totally State and local response. We did have Federal people on the sidelines giving technical advice, but not in terms of coming in and taking over or coming in and making it a Federal responsibility, I think that the law and our system is laid out where there are various roles for each segment of our society, whether it's private, whether it's the Federal, State, or local, and each has its defined responsibilities. There are some overlaps, obviously.

When you make reference to RCRA, RCRA has the responsibility in the law that deals with the manifest system. We now have manifest systems under the Department of Transportation and we have related emergency contigency plans.

Senator LAUTENBERG. There are reasons why it sometimes is a Federal or a State and local role——

Mr. MCGRAW. Again, it's the networking problem. If you are talking about an isolated incident in a given locality, the response mechanisms for that definitely can be local. But if you are talking about situations in the broader sense of coming up with contingency plans that cut across State lines or, for example, the transportation of hazardous waste or hazardous substances across State lines, you begin to have a clear need for a Federal role or regional compact. This has been exemplified in the uniform manifest system that we just recently instigated under RCRA. There are a number of other Federal responsibilities, but very few of them are at the local level in terms of response. I think that if we can separate the Federal responsibility for response and the Federal responsibility

for planning and preparedness we can probably focus the issue a bit.

Obviously, the vast array of Federal agencies we have here at this table plus FEMA and DOT and a number of other ones that are not here today do definitely have a responsibility but it's not as the first responder.

Senator LAUTENBERG. There could be a plant located in an isolated rural area, as often happens. The response effort may be some division of EPA that could deal with it more effectively, better equipped. As you heard this morning, some of the local fire departments, some of our best don't have the appropriate equipment and one thing I don't want to see us do, Mr. McGraw, is get into a turf dispute when in fact, we have to examine the first mission, that is, to protect the safety and health of all our citizens wherever we can and that's obviously the reason for the birth of Superfund. There was an insufficient capacity among the States, including this very aggressive, very progressive State of ours, to get on with the job of clean-up.

There was a recognition that Federal help was necessary to get this job done.

Mr. MCGRAW. The national response team and the regional response team helped prevent the turf dispute, if there is any, because those groups pull together all of the involved Federal agencies and, in the case of the RRT, the State and local officials as well.

Senator LAUTENBERG. We will examine that in just a minute. If the first response is for local State government, OSHA, because it preempts the State, often cuts them off from data that might help them prepare for emergencies. OSHA therefore serves as the first repository for information. Your alert system, Ms. Matheson, is interesting. You described at one point, you got it through the media. Am I correct?

Ms. MATHESON. We have a referral system. There are procedures, if there is a catastrophe type situation reported in the media, we can——

Senator LAUTENBERG. Someone has to scan the newspapers or clipping services to find reports of incidents?

Ms. MATHESON. Our employees are supposed to keep abreast of the happenings in their community so they can be responsible to the citizens that they serve.

Senator LAUTENBERG. Right. But it's not a system based on tattlers, you have, I assume, some structure for regular reporting of incidents, you define the size of the employer, et cetera, et cetera. So it is curious to me that you say OSHA employees had to go to the media that——

Ms. MATHESON. That was not an incident which resulted in the hospitalization of five or more employees and there were no fatalities, so there would not be a reporting requirement. That is a way to monitor places we need to go to, in addition to our program schedule.

Senator LAUTENBERG. Do you feel you are interfering with another agency's charge if the responsibility doesn't call for you to be there, it can obviously be a serious enough occasion for you to——

Ms. MATHESON. We were inspecting, yes, sir.

Senator LAUTENBERG. Ms. Matheson, the Union Carbide safety team found a danger that MIC could be contaminated with water and warned that a runaway reaction could result. You heard that earlier this morning; and that Carbide's safety response would not be adequate to prevent, and I quote here "a catastrophic failure of the MIC tank." As far as I know, these safety systems haven't changed.

On what basis does OSHA now disagree with the Carbide safety survey—I heard you say that you were satisfied that they had taken all the precautions and that you were going to be invited to participate or at least review the decision to reopen the plant. Some part of that, you said, depended on some of the research, some of the information that came out of Bhopal, you don't have that yet, right?

Ms. MATHESON. No, Senator. The Union Carbide safety audit that you are referring to was followed up by Union Carbide's onsite plant safety department and they responded to their internal corporate recommendations not once, but twice during OSHA's review. While onsite, we verified the adequacy of Union Carbide's responses to the potential contamination hazard raised by their corporate safety audit. Mr. Miles can address in great detail why it was our conclusion that the necessary actions taken in response to a potential contamination in the above ground storage tanks during a limited period of time were adequate to address the potential hazard.

Senator LAUTENBERG. There was quite a list of recommendations for improvements on the Carbide safety internal memo, dated September 11, and there were recommendations, about changing systems, using different materials, et cetera. Did you review this entire list and check off——

Ms. MATHESON. Yes, and there is one document, or actually two subsequent documents, that some conversations in this area did not seem to reflect upon. These are written correctional action plans submitted and prepared by Union Carbide in response to the safety audit. These correctional action plans were reviewed by OSHA, and Mr. Miles can tell you our professional assessment of the sufficiency of Union Carbide's correctional action plans.

Senator LAUTENBERG. You are talking about the approval of the plan now? Are you saying that it's literarily sound?

Ms. MATHESON. No, I'm saying there were four specific recommendations raised, and in an action plan, Union Carbide addressed those four recommendations regarding a potential water contamination and indeed, undertook certain administrative controls and changed part of their procedure. We had verified the steps that they took.

Senator LAUTENBERG. Mr. Miles, do you want to comment?

Mr. MILES. I think if you get specific about the four particular items, the first concerned the company's use of a water brine system to cool the tanks in the MIC unit. These were not the regular storage tanks; these were unit tanks where they only hold MIC for a matter of hours before they ship it on to a storage tank and, one recommendation made was for them to look at a chloroform system and another was to monitor more closely. They changed their system to sample more frequently for water content which in my

opinion would be acceptable. The company's corrective action plans went on to talk about two other of the four items they had there in the audit—the need for emphasizing to operating personnel the dangers of a runaway reaction and the need for double valve and vent systems to isolate the MIC unit. The company responded in its action plan by placing increased emphasis on training employees in prevention of water contamination and proper handling of any contamination that occurred. They rejected the idea of double valves and venting because experience with similar systems indicated that more serious hazards resulted than were corrected. The company also restricted the time in which MIC could be held in the unit tanks. We looked at these responses carefully. The said they wouldn't need to go to a chloroform system, although they do have a chloroform system on the big storage tank.

Senator LAUTENBERG. Why didn't they go to the chloroform system?

Mr. MILES. I think the ultimate method was the one they wanted to use.

Senator LAUTENBERG. Was there a question of cost effectiveness?

Mr. MILES. They also talked about the costs. The costs would be one factor in changing the cooling system. But still they addressed the issue to say they will monitor it more closely and we accepted that answer.

Senator LAUTENBERG. They had quite a list of concerns and recommendations, and you have a very heavy responsibility based on your mandate and the number of questions that remain unanswered.

Mr. MILES. Yes, sir. We plan to go back when they start in operation and assure they are doing the things they say they are doing.

Senator LAUTENBERG. Before they start or after they start?

Mr. MILES. We will be there before they start and also after they start.

Senator LAUTENBERG. I think they suggested today they would be happy to have an approval, if not required, but informal from you.

Mr. MILES. I think that's true and we provided our expertise to them in the plant in Georgia. Before they took the drums back and started dedrumming, we would watch the operation and go through a dry run and had comments how they could protect their employees. We are trying to work together with the company to insure that employees are not exposed to hazards.

Senator LAUTENBERG. Did you address the Carbide safety survey in your recent MIC reports?

Mr. MILES. Yes, we did. In parts of it, in the Carbide report, I think it's on page 674, we do address some of the issues raised in that safety report. We didn't address all the issues raised but we did address some of them and as Mrs. Matheson says, we went back once to check these and went back a second time to make sure what the company had done in response to their September 11 audit.

Senator LAUTENBERG. Is worker supervision used to monitor leaks? Is that still part of the system?

Mr. MILES. The way they monitor leaks, the primary system is by measurement of pressure. When there is a pressure drop, they assume they have a leak in the line and shut it down and check it.

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However, with a dedrumming operation, when we observed that over there, when they were taking the MIC out of the drums and back into the process, we did observe the operation. The employees were protected. They wore supplied-air respirators and they were protected from exposure to MIC.

Senator LAUTENBERG. In the intermal memo, part of this says personnel at MIC 2 do not have a workable instrumental method for MIC leak detection. MIC leak detection and identification is currently conducted entirely by odor or eye irritation. The ACGIH and the OSHA, I will use the acronysms here, TWA for methyl isocyanate, is very low, 0.02 parts per million. The current method for leak detection is very likely permitting MIC exposures that exceed the accepted TWA.

Mr. MILES. That's based on 8-hour averages but I will say we did observe their systems, we did talk about measuring MIC, about alarms which they had in another place and we asked them to look into methods for alarms.

Senator LAUTENBERG. So there is work to be done there?

Mr. MILES. There are recommendations to look at, yes.

Senator LAUTENBERG. So you have a responsibility to see that these recommendations are carried out before you can suggest employees go back to work and expose themselves to the nose and eye test.

Mr. MILES. As I said, in every instance we looked at, employees were protected. Employers had the person protected.

Senator LAUTENBERG. But if it get past this and I have to call it "employee detection system," what detection is there in the community?

Mr. MILES. We primarily are concerned about the employees and hopefully, we would say that in that instance, that it would not be massive enough to get out of workplace, but if it was of such a nature, we did look at the company's procedures. In our report, we addressed the emergency procedures they had, notification of the surrounding community. In Charleston, I think the Kanawha valley is going to have tests with the public out there on what to do.

Senator LAUTENBERG. But your primary concern is with the employee and once the cloud escapes——

Ms. MATHESON. But we were able to verify, Senator, that they have in process the backup redundant safety systems, the caustic neutralization scrubber systems to neutralize the MIC. They have venting of MIC vapors that may occur through spills and leaks through a system which neutralizes the substance and that would, of course, be a safeguard, not only to the employees, but to the community, also.

Senator LAUTENBERG. You know that redundant systems don't always guarantee that the safety factor is there. Mr. McGraw, you said that you worked with OSHA and yet EPA, I believe, did not know about 23 spills at the Institute plant. Should you have known? How can you know if you didn't know about the spills within the plant? Are we missing an important communication link here?

Mr. MCGRAW. The information that we got about the spills that we did report upon came from the OSHA files. As a result of a re-

quest by letter to Union Carbide under CERCLA 104(E). We asked them specifically to review all of their files and submit additional information.

Senator LAUTENBERG. How old was the information that you finally obtained? How long was it before you discovered or searched for this?

Mr. MCGRAW. I think we got the final lists sometime in January.

Senator LAUTENBERG. How far back did it date?

Mr. MCGRAW. It went back to 1981, the time of Superfund authorization.

Senator LAUTENBERG. So the information you obtained was that which might have been obtained in earlier years but you were not aware of——

Mr. MCGRAW. We would not have been aware of that, nor would OSHA. I will not speak for them, but unless OSHA picked up that data on a specific investigation cycle, as there are no specific reporting requirements, the information would be taken from the site at the time of a specific inspection. Is that not right?

Ms. MATHESON. We have, through our past history of inspections and investigations, learned that a most helpful source of identifying the sufficiency of a company's procedures is to ask for their pertinent and relevant documents. One of the things that we try to ask for in our inspections of chemical plants is their own internal documents that they use to record and monitor spills and leaks. We asked for the pertinent documents for tl.e Number Two MIC production unit during the years 1983 and 1984.

Mr. MCGRAW. We are working together to see if there are information networks that need to be linked to assure that we share information. I don't think we would look at it on a spill by spill basis but certainly would expect to detect trends that OSHA is picking up within a given facility or a given area. We would then be able to begin to focus our enforcement efforts into that area.

Senator LAUTENBERG. You say you are beginning to look at the places where you should work together and I think you said earlier in your remarks that there were difficulties at times in making sure that coordination between—what was it, a dozen agencies?

Mr. MCGRAW. I didn't say difficulty, I'm saying there are 12 different agencies or more with separate Federal statutes and that they all have a little piece of the pie, so to speak. The NRT is in existence for the very reason, bringing together those groups to reduce the overlaps and increase coordination. Right after this incident, we met. In fact, the Labor Department/OSHA is part of the NRT and we all got together to make certain that everyone was aware of what each person's authorities were, so action could be taken and to prevent duplication and overlap. We worked very diligently in our region 3 regional response team. They were made up of Federal agencies and State agencies. They are now reviewing the contingency plans of West Virginia's Kanawha Valley, working with the State to make such information available in the near future.

So I think the mechanism is there to bring about coordination.

Senator LAUTENBERG. Dr. Houk, do you think the OSHA standards, workplace standards, are adequate to protect the public health?

Dr. HOUK. Not in all instances. As I understand the act, there are some instances that the standards are based upon more of the technological feasibility than on a health standard. Let me give a specific example, Senator. The standard of 40 micrograms per deciliter in blood or the air standards in some of the plants would cause more than 40 deciliters or micrograms per deciliter in blood. This would in no instance protect the unborn child of a mother who is working in that industry and since February of this year, our knowledge has increased and it would in no instance protect the middle-aged American male from hypertension and the myocardial infarction, strokes that are associated with that.

Senator LAUTENBERG. So that again, based on your observation, I don't want to get into a debate here, there are opportunities for things to fall through the cracks and the one mission I would like to accomplish in our final legislative initiative is to make sure that with minimal overlap, that the health of the community as well as the workers is protected to whatever extent we can.

Dr. HOUK. Senator, industries in most plants have medical departments designed for the protection of their worker. Whether or not they, in fact, do that, some of us have some serious reservations, whether an annual or semiannual physical examination is, in fact, harmful rather than helpful. But virtually no one has departments that are designed to protect the community around that plant and I think that is what not only Bhopal, but several incidents that have happened in the last 20 or 30 or 40 years, even going gack to the 1920's, would indicate that that should be a concern.

In addition to that, when plants are established in relatively remote areas, then I think the local government has some responsibility through zoning laws, et cetera, to prevent immediately surrounding that plant with a hazardous occupation or hazardous material being generated from becoming densely populated.

Senator LAUTENBERG. That's a tough assignment, but obviously, as a population grows, so does the element of risk.

Do you have any recommendations, though your area is really response, what, in your judgment, might be a better way to reduce the health risk associated with the handling of toxic chemicals?

Dr. HOUK. In my view, the only way that we could reduce the risk to the minimum is primarily prevention and that's to take a very careful look at the processes that are in place, the safety factors that are there, the manufacturing process, the adequacy of the fail-safe systems, in quotations, because I don't know of any safe system that is not subject to failure at some times, and Senator, this can be done. It takes some concerns, it takes an understanding of public health.

The Defense Department Appropriation Act ascribed to the education of HHS the public health responsibilities for the demilitarization of chemical weapons. The secretary delegated that to CDC and CDC delegated that to me and that is under my direct supervision and working with the Army in establishing the plants, the engineering techniques, the alarm systems, et cetera, that are in that, I believe that this is entirely possible to do and should have much more emphasis.

If we look at a situation such as was mentioned earlier in the hearings with 100,000 pounds of hydrogen cyanide being stored in a facility in a rather populated area, if there were a release of that, there is no way that major disaster could not be prevented. The release would depend upon the wind direction, the wind speed, the topography of the area. The hydrogen cyanide is a gas that is roughly the same weight as air, so if the release went upward, and say it was 300 or 400 feet into the air through a valve it came through, it may settle with an inversion 10 or 15 or 20 or 30 miles away from that site. There are so many uncertainties that in my view, the major emphasis should be on the prevention, the primary prevention of these things as they may occur.

This is the reason I feel very strongly that we should not use the word "accident." These are incidents. An accident implies it's a random event for which nothing can be done to prevent it and I do not believe that to be the case.

Senator LAUTENBERG. Just one last thing I wanted to ask Dr. Rall. Many of us here are focusing on the acute threat posed by large volume releases of toxic chemicals—but literally tens of thousands of tons of these chemicals are released legally day in, day out, without public knowledge. Do you have any idea what kinds of chronic health threats these regular long-term releases might pose?

Mr. RALL. Mr. Chairman, I think we are concerned about both acute and long-term chronic because a few acute releases can cause permanent damage and I think that's something we have to remember in the sort of release that we are talking about today. The long-term, low-level exposure to chemicals has been a problem for many years. Certainly Dr. Houk's example of relatively low exposure to lead can cause much more damage than we realized it could as little as 5 years ago. We certainly know that a variety of long-term, low-level exposures can do everything from cut down male fertility to causing neurological damage. I think we have to be constantly concerned and worried about it.

Senator LAUTENBERG. Are you persuaded through your own experience or by general opinion that the comments we heard today relative about the health of those employed in the industry that handles, we now know, some fairly dangerous material, is better than the population at large?

Mr. RALL. Interpreting long-term epidemiologic data is one of the most hazardous occupations I'm aware of.

Senator LAUTENBERG. If you are good and strong to begin with, you have a better chance.

Dr. HOUK. Senator, I would like to emphasize this is the reason I have mentioned several times before this committee in Washington hearings, that a routine physical examination and routine laboratory testing procedure done over a period of time do not in any way negate our concerns for the effects of a low dose exposure. It is very likely, in my estimation, in my view, that the major toxic effect of these chemicals is going to be simply to increase the risk of more common diseases that we have already in our population, such as lead with myocardial infarction, stroke, et cetera.

I don't think the answer is in on this. We have to design ways that we can test these chemicals in the animal model. When we are talking about releases, particularly maybe not any specific

chemical plant, but from hazardous waste dumps, fires, explosions, who knows, we don't even know how to test the toxicity of chemicals in combination. We don't have any tests. We don't even know how to test that.

Senator LAUTENBERG. You've raised many important and troubling issues. I want to thank you. Ms. Matheson, I wanted to ask you a question about the frequency of OSHA inspections. How often do you get around to specific plants? Before I described your system as a tattle system, someone picks up the phone, you said a worker concerned or some informant, and I don't mean it as a pejorative, but someone, how often do you get around to—do your people get around to chemical plants? Last Thursday I understand a member of a committee staff talked with Mr. McGrady and he said that because of the recent accident, an OSHA team is now at the American Cyanamid plant but he also said that before that the last OSHA inspection was 1981; before that, in 1978; and before that, in 1976. Three inspections in a period of 8 years. We have a very high risk, obviously, in the Linden area where the American Cyanamid plant is located.

Are you satisfied that three inspections in 8 years adequately protects the workers and the public, even though as Mr. Myles pointed out, the public at large is not your direct responsibility?

Ms. MATHESON. I believe that in American Cyanamid, we were last there in June 1984. There were two area offices at OSHA that were merged and incorporated and their records were consolidated, and as people at OSHA were gathering information, I'm not sure that we had given all of our inspection dates because the records were somewhat segregated.

We have been there 18 times since the Act was promulgated, 14 times from 1975 to 1984, and we did do a general schedule health inspection in September 1981. I apologize for any confusion and concern that it has caused the committee. But again, our targeting system is at times on a 3-year scheduling cycle.

Senator LAUTENBERG. I'm reminded that this information came from a safety director at the plant who personally felt that the number of inspections was insufficient. I'm told to correct the record. That's my editorial comment. I was told that there were three trips, three visits there, in that period of time, that 8-year period of time.

Ms. MATHESON. I believe our records—we can furnish them for you in detail—will show more presence.

[The following information was supplied for the record:]

Inspection History
AMERICAN CYANAMID
Linden, New Jersey

Inspection Start Date	Type of Inspection
12/19/72	Accident, Safety
3/30/73	Accident, Safety
2/26/74	Accident, Safety
5/3/74	Follow-up, Safety
2/15/75	General Schedule, Health
3/20/75	Compliant, Safety
4/15/75	General Schedule, Health
6/5/75	Follow-up, Safety
2/23/76	General Schedule, Safety
4/9/76	Follow-up, Safety
2/25/77	Complaint
5/25/77	Complaint
11/2/77	Complaint, Health
5/10/78	General Schedule, Health
8/22/78	Complaint, Health
6/29/79	Complaint, Safety
9/10/81	General Schedule, Health
6/1/84	NEP-Asbestos, General Schedule, Health

Senator LAUTENBERG. All right. Before we release the panel and thank you for your participation, it does seem to me that there is that open chasm through which things fall and I would like to see some very clear requirements as to the number of inspections, et cetera, that must take place and how we protect the community, I think Dr. Houk makes a wonderful point here. We may be taking appropriate care of the worker without doing the same for the community. There are members of the community that don't work in a given plant and this community as a whole is certainly entitled at least to the same protections. Thank you all very much.

We are going to take just a 5-minute break before the next panel for stenographic reasons.

[Whereupon a recess was taken.]

Senator LAUTENBERG. We are now going to be hearing from State Senator Ray Lesniak. It is past 2 o'clock, Ray. I'm sorry that things took longer than we expected but there is a lot of information here. You played a key role in the development of a State program to deal with some of the problems that we have been discussing that are under review and you and I share a common mission and that is to make sure that we protect, as much as possible, the health of the community as well as those who work within these facilities and keep these accidents, incidents from happening and if they do happen, that there are steep penalties enough that we have got the attention of those responsible or those who could be responsible.

So, Ray, thank you very much, Senator Lesniak, for being with us. Please go ahead with your testimony.

STATEMENT OF HON. RAYMOND LESNIAK, NEW JERSEY STATE SENATOR

Senator LESNIAK. Thank you, Senator. I just missed my flight to the Bahamas for my vacation, but don't be concerned about it.

Senator LAUTENBERG. We will take care of that. We will keep you here in New Jersey where the sun shines.

Senator LESNIAK. Actually, I want to thank you very much for bringing this hearing to the State of New Jersey today. We have already had some very significant ancillary effects as a result of bringing everybody together. I think much was accomplished at side bar with the EPA and the DEP and myself, the county organizations communicating in terms of the testimony today and the problems that are out there and how to deal with those problems. I think one thing that is quite evident is that there are many agenices that are going in many different directions and there is not sufficient communication among and between both the Government, industry and the public in this regard.

This hearing is, as stated in the agenda, to investigate safety precautions and emergency preparedness to respond to chemical releases. Senator, I think that we could answer the question as to whether we are prepared in terms of dealing with an emergency very simply and that is we obviously are not and even if we were, I don't think we would have any way right now of assessing that preparedness and one of the crucial elements of preparedness is in knowing and identifying the problem and how to respond to it.

In response to that need, and you have heard testimony about this previous, I formed a Hazardous Materials Advisory Council for Union and Middlesex County, which is an ad hoc group of industry, government and public representatives designed to do specifically that, identify what the problem is and what the needs of the community are.

We have only had two meetings to date, but within that short period of time, it's very obvious that there are serious inadequacies in our ability to identify the problem. One thing we find out immediately is that any emergency response program has to deal from the ground up. It has to start with the local communities and then reach its way up because by the time you reach the top, which is the Federal Government's response, the major problem has already gone well down the road toward affecting the community.

What we found out in terms of the needs is that, and this is talking with people from Linden who I believe are probably the most prepared, probably the most prepared municipality that we have, and yet in terms of Linden and Union County, we do not even have an inventory of the firms within those boundaries and the hazardous materials that they store and manufacture and produce and of course, that brings us to the right to know law and the Federal preemption of the State's right to know law. It's critical.

It's critical that you bring back to your colleagues, I believe, in Washington that we have a strong community right to know law and that if you do insist upon the preemption doctrine in that law, and there are some good things that come out of standard procedures, however, the problem that we have always seen in dealing with Federal preemption is that the Federal law is not sufficient to deal with the needs of this State, which has a strong commitment to protecting the public and to protecting the environment. That starts with Superfund in terms of the insufficient funding to clean up hazardous dump sites.

Of course, the right, State's right to know law and water quality and testing, there are just many issues involved where the Federal law is not adequate to have us deal with the problem.

So I could say that those industries that have stated today that they are in support of the right to know concept on the Federal level, if they want to have standard procedures throughout the country, they ought to also lobby for a very strong law and not any weakening of the Federal law because only a strong law can adequately protect the needs of the people of the State of New Jersey.

So that probably is, I believe, the most important thing that you can do to help us in dealing with the problem on a local level, is to give us the ability to have sufficient information to deal with the problem. We, as you know, have recently passed a law increasing fines and establishing additional administrative remedies and mandatory reporting requirements for emissions exceeding any allowable limits. That obviously is not the solution to minimizing the risk of industrial emissions. I would suggest the possibility of, and in looking at this myself for the State level, of designating certain extremely hazardous chemicals and requiring some high level alarm systems for the production involving those extremely hazardous chemicals similarly to what we did with regard to highly

flammable liquids in response to the Texaco fire that we had last year.

But that would be my brief comments with regard to the Federal Government and again, I want to thank you for bringing all the agencies together so that we can more effectively communicate.

Senator LAUTENBERG. I thank you, Senator Lesniak. The one thing that I think is obvious is that it's beyond often the municipality, the county, the region, the State's ability to control what happens in its neighbor's backyard. The information required is vast. There are new chemicals, new materials being produced all the time and the fact that New Jersey is setting the pace, as it often does, and your getting approval of a bill to increase the nonreporting penalties is very valuable. As you know, there are no civil penalties under the response provisions of the Superfund. It's an area I'm going to be addressing in my package of amendments to Superfund, including graduated penalties, which says listen, if you do it more than once, you are going to really feel it and we have to take that course of action.

Ray, the other thing is, of course, the capability. Linden is a community with, I think, very extensive capability relative to its size and yet the Mayor sat here, and as the representative of the firemen did, saying we don't have enough to do the job with. So I won't keep you. You have been kind to wait. We will take the right to know legislation both for workers and for community, it's very serious things, and frankly, I think they have to be incorporated at the Federal level to make sure if the State isn't aware or doesn't offer the kind of protections that every citizen is entitled to, that there is a role for the Federal Government and we intend to pursue that. Thanks very much. I appreciate it, Senator Lesniak.

Senator LESNIAK. Thank you.

Senator LAUTENBERG. There is a real, what you call cooperative spirit, coming from the legislative side, and extending to the executive side, and I invite the panel of State officials, including Mr. Tyler from the New Jersey Department of Environmental Protection, Commissioner McGough from the New York City Department of Environmental Protection. We have talked on the phone and I'm glad to have you here. Do we have Colonel Pagano here?

Major SPEDDING. Major Spedding.

Senator LAUTENBERG. I though Pagano got a little bit younger.

Major SPEDDING. He got tied up.

Senator LAUTENBERG. We have Dr. Parken?

Dr. PARKEN. Yes.

Senator LAUTENBERG. We thank you all for staying. I known you have lots of other responsibilities. We will get moving along. Commissioner McGough, we are happy to have you here. Our friend across the river, we share the concerns that the region has and I invite you to present your testimony.

STATEMENT OF JOSEPH T. McGOUGH, COMMISSIONER, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. MCGOUGH. Thank you. Senator, and thank you for providing me with the opportunity to speak here.

Good afternoon. My name is Joseph McGough. I'm Commissioner of the New York City Department of Environmental Protection. I am speaking today on behalf of the city of New York. The city has long felt a rising concern for the consequences of accidental releases of noxious and sometimes toxic gases to the air from sources upwind of the city.

In New York City's case, the upwind sources are most frequently out of State, thus New York's problems are regional in nature. Accordingly, the city has been cooperating with the New York and New Jersey State and Federal agencies to augment the regional emergency response capabilities for dealing with releases of toxic materials to the air. What is most needed, however, are Federal laws and regulations to broaden and speed the notification processes for toxic and noxious air releases, to expand the reporting of materials produced, transported, and used in this area, and increases in the fine structures authorized to combat these types of releases. Such improvements in the Federal laws and regulations would greatly improve local government's ability to plan and respond to these emergencies.

In addition, increased fines would create an incentive for industry to prevent these releases in the first instance. It is the enactment of these types of Federal laws, and regulations that we seek today.

The recent toxic gas catastrophe in India has served to emphasize the potential consequences of a release of hazardous material to the air. A review of the most recent history of accidential air emissions which have impacted New York City indicates the need for greater preventative maintenance and improved procedures regarding hazardous substances released to the air. In January of last year, emissions for a New Jersey Exxon refinery occurred resulting in strong burnt rubber and rotten egg odors along with numerous citizen complaints of nausea. We were able to determine the source of these emissions only after its passage over the city of New York, for there was no official notification process required of the company which would have given us early warning of the nature of the incident.

In October 1984, an accidental release by American Cyanamid of Malathion, a pesticide which has been proposed by EPA to be listed as a hazardous waste, resulted in strong odor and nausea complaints in both New Jersey and our Borough of Staten Island. In late November, a vaporized cloud of Oleum, a form of sulfuric acid, passed over the Goethals Bridge, incapacitating workers on the bridge, resulting in some being sent to the hospital.

The source of this cloud was finally confirmed as an accidental release by a nearby DuPont facility, but the company originally felt that they were not under legal obligation to report such a small quantity release.

Most recently, on January 21st of this year, a second accidental release of noxious gas from New Jersey's American Cyanamid plant resulted in odor and nausea complaints throughout the city and Nassau County. Although the offending company notified local officials, no official notification was required to the Federal agencies, which could then have provided rapid notification of other States or other local governments outside of New Jersey which

were impacted. A recent report by the staff of this Senate committee on toxic releases by chemical companies is reported to have found that seven large chemical handling companies in New Jersey maintain large inventories of toxic and hazardous substances.

The report is also said to indicate that these chemical industries have been negligent in the required maintenance of contingency plans needed in case of life threatening releases of hazardous substances. My department would like to review this report and work together with EPA, the Coast Guard and New Jersey DEP and New York State DEC in order to assure ourselves that these companies have complied with all local and Federal laws in order to prevent any future accidental releases.

In addition to these major accidental releases, there has been a history of chronic industrial odor problems which have impacted Staten Island and other city boroughs. The New York State Department of Environmental Conservation completed an air quality study in 1983 which documented hundreds of odor complaints between 1979 and 1982 and recommended that five odor categories be quickly mitigated. The incidence of accidental release of toxic and noxious compounds in the air seems to be on the increase and we must work swiftly to reverse or eliminate this trend.

We commend the State of New Jersey, I believe Senator Lesniak, who just testified, sponsored the recent bill revising their State air pollution control act which, through more stringent notification requirements for violations as will as increased penalties for air emission violations, creates an incentive for industry to prevent these types of incidents and provides for more rapid and efficient responses to releases should they occur.

As for improving notification procedures, we have a specific proposal. We would propose that a dedicated communications network be developed to insure the immediate and efficient dissemination of accurate information when an accidental release occurs.

A state of the air computer assisted communication system would have the advantage of directly linking specified industry sites where such release could occur in all appropriate response agencies throughout the region. Information such as the type and quantity of release could then be simultaneously dispatched directly from the source of the governmental and professional services responsible for emergency action throughout the region.

This would replace the current system of serial telephone calls which is inherently slower and could lead to inaccurate reports. I feel this system could be jointly funded by EPA grant money as well as industry funding. Since one of the largest concentrations of industrial, chemical corporations is located in this metropolitan area, we feel such a system is warranted in this region.

Finally, we commend EPA on their recent rule making which established specific reportable quantities for release or spill of 340 chemicals. However, we caution EPA that reportable quantities of releases to the air should be much stricter they they are at present, since the current reportable quantities are predominantly based on spills of liquids onto land or water. Reportable quantities of gas releases should be much lower, for it takes only a small release to noxious or toxic gas to potentially affect large areas of the populous and environment.

In conclusion, I would like to emphasize the problem we are speaking to today is one which crosses State boundaries. It is not a local New Jersey problem but a regional problem with the potential for even greater damage in the populous boroughs of New York City than here in New Jersey.

Accordingly, the need for Federal laws and regulations is clear and we hope that Congress and EPA will heed our call to the following actions: The tightening of reportable quantities for emissions into the air; two, the adoption of our proposal for the creation of a dedicated communications network, to assure the rapid notification of all concerned governmental agencies throughout the region in order to facilitate their timely response to protect the public's health and safety; three, expanded reporting requirements by the chemical industry to assure wide dissemination of the identity of toxics and noxious chemicals used, produced, stored, transported, including the intermediary products of chemical processes, so that local governments can plan for all enventualities.

One of the things I would just like to say as an aside here, in the malathion case, we heard the doctor that testified in an earlier panel from the Center for Disease Control that Malathion was a well known chemical and its effects were well known. However, if you are in a Staten Island hospital and a doctor on emergency duty, somebody comes in not being able to breathe and you are unfamiliar with what chemical it is in the air, which we were for hours, you may give some other treatment to that indivdual which could exacerbate the problem and one of the things we need to do, of course, is we have to know what chemicals abound around us and we have to therefore have prompt notification of what they are so we can advise health officials on how to treat these chemicals.

So even though it is known in the sense that once you have identified the chemical, a doctor would known what to give, the passage of that information, of course, is very, very important.

Finally, a substantial increase in the fine structure of current Federal laws regarding the unauthorized release of chemicals in order to create sufficient incentives for the chemical companies to take all necessary steps to prevent releases of toxic and noxious chemicals. And on a personal note, I would like to say that I testify a lot before a lot of Senate committees and congressional committees in Washington as well as in New York State and we always talk about the end of the pipe, we are always talking about how to clean it up, how to get it out of the water, how to get it out.

Why don't we talk about how to prevent it, getting it in. Then we won't be spending billions and billions of dollars on trying to get it out and I would just like the whole dialog, and I know that's a major change, to change particularly with respect to chemicals. As you stated earlier, hundreds are being created every day and we don't have the slightest notion of what their impacts are on the environment, on the water supply, on our ground water, on our air and we are going to be spending billions and billions just to get it out of our environment. Why don't we do something about preventing it from getting in.

In conclusion, we hope that this committee and EPA will consider the recommendations I have made. I again want to thank you, Senator, for inviting me here today to give my views. Thank you.

Senator LAUTENBERG. We are delighted to have you with us and note with a degree of appreciation that your testimony was 10 minutes and 5 seconds. That was pretty good.

The proposals that you outlined make a lot of sense. We invite you to submit anything in writing in addition to the testimony you have if you would like to. You know the people in my office, as a matter of fact, very well, because we respect the professionalism with which you handle that department, the responsibility there, and we want to cooperate.

This is a regional problem and there is no denying it. As much as we like to keep the Federal Government out of everybody's business, there are times when we just can't cut problems off conveniently at the border.

So thanks very much, Commissioner. We are pleased to have you with us. We will go on with the rest of the panel. You are welcome to stay. If you have got to go, we respect that, as well.

Mr. MCGOUGH. I will stay. Thanks.

Senator LAUTENBERG. Mr. Tyler, George, we are happy to have you. Mr. Tyler is the Assistant Commissioner for the Division of Environmental Management and Control and you have with you someone else?

STATEMENT OF GEORGE TYLER, ASSISTANT COMMISSIONER FOR ENVIRONMENTAL MANAGEMENT AND CONTROL, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. TYLER. Yes, Senator, with me today is Director Thomas Burke of our Office of Science and Research and also Mr. James Ross, who is the head of the Commissioner's Office of Emergency Response Preparedness. I would like to begin by thanking you for the opportunity to testify today, Senator, and at the outset, I would like to commend you first, I think, on your endurance for the day you have put in, and more importantly, for initiating this legislative inquiry into the issues posed by the emission of toxic air contaminants.

The release of toxic chemicals to the air is a great concern in New Jersey, especially in view of our population density and large diverse chemical industry. The department of environmental protection believes that improved controls over chemical releases and better emergency response is absolutely necessary. This is obvious based on the recent chemical release incidents in New Jersey and the heightened awareness brought about by the Bhopal, India, tragedy.

I must also compliment you, Senator, on the issues that you have raised by tying together emergency response, right to know, conventional air pollution enforcement issues, and public safety questions. You have framed the questions in a way that suggests a need for new and innovative legislative and regulatory action. Let me be a bit more specific. The question before you today can be divided into four categories. First there are questions raised by the catastrophic incident that occurred in India.

Second, the less serious but more common incidents of accidental releases of air contaminants that are typically experienced in industrialized areas of the country.

Third, there is the continuous emission of toxics during nonemergency circumstances, that is, the emission of toxic air pollutants during normal plant operations; and finally there is the more convential but perhaps more important question of what is the environmental fate of toxic substances emitted on a routine basis from all forms of industry?

My comments today will address the first two incidents, the potential response to Bhopal and the response to safety issues from other types of episodic releases. However, New Jersey has extensive experience in dealing with the nonemergency, air pollution control issues and I would be happy to address them, also, if you have questions in that regard.

Since October of 1984, there have been at least 14 incidents of accidental release of chemicals into the air in the Newark to Woodbridge region. Some of these incidents have resulted in widespread air pollution causing odors, eye tearing, and other adverse health effects. In some cases, there have been repeated incidents at the same plants. Our enforcement response has included fines and orders to conduct comprehensive evaluations of the risk of accidental chemical releases to be followed up by remedial measures. The cause for his dramatic increase in unexpected releases to the atmosphere in this industrial area is not readily apparent. Poor housekeeping, insufficient personnel training, failure to maintain old equipment all are suspect. Chronologically, in the midst of this unprecedented number of chemical releases in New Jersey, the Bhopal, India, tragedy occurred in December of 1984. Of the 14 cited incidents since October, 8 happened before Bhopal and 6 afterwards. Responsible public officials must ask themselves can such an incident happen in the United States.

In New Jersey, my department's response to Bhopal tragedy included an effort to identify chemicals similar to methyl isocyanate (this effort was in addition to the ongoing enforcement actions we were taking, to reduce the frequency of chemical accidents). Before I discuss the details of the department's search for toxic chemicals similar to MIC, I would like to stress that the most critical issue for you to consider is how to prevent the accidental release of large quantities of such chemicals. While New Jersey has a fairly extensive emergency response capability, no one can or should rely on after the accident emergency response and threats of fines to protect the public.

It seems apparent from the Bhopal incident descriptions that the best offsite emergency response available probably would not have saved those persons closet to the plant. The quantity of toxic chemical released in a relatively short time period immediately adjacent to a densely populated area probably did not allow enough time to save many of those who died, even if an offsite evacuation had been implemented as quickly as possible. It is imperative that the release of large quantities of highly toxic chemicals be prevented in the first place. This is an obvious but perhaps not an easily implementable objective.

In the United States, we have hundreds of thousands of chemicals in use in our society. Which do we evaluate for the risks of accidental release? Do any of these prevent a risk of the same order of magnitude as the 15,000 gallon storage tank of MIC in

India? How do we prevent such an accident if we find similar circumstances here? My department has begun to look for answers to these questions. They are not easily answered and we don't have pat answers today, but I believe we made progress which we would like to share with you.

The first obvious response to Bhopal is to determine if MIC is stored or used in New Jersey. Based on a review of the data bases available to the department and follow-up contacts with industry, we determined that MIC is used only in one pilot plant operation and a few laboratories in New Jersey. The quantities involved do not present a danger off the property of the facilities. Parenthetically, I should point out that while our data bases provide better information on industrial chemical use than those available in most other States, more and better data is needed. Our task in evaluating the risk posed by chemical facilities would have been much easier and much more quickly accomplished if New Jersey's right to know legislation had been in effect for manufacturing operations.

Having determined that MIC use is not an issue in New Jersey, the next step was to determine if other similar chemicals are present in large quantities in the State. Given the extent and diversity of New Jersey's chemical industry, the answer to this question might be assumed to be yes. However, upon closer evaluation, it appears that few chemicals, fortunately, have properties similar to MIC. While the exact details of the MIC accident in India are not fully known, the unusual combined properties of the substance are clearly important factors. Those properties are its extremely high toxicity, its low boiling point and its relatively high reactivity.

There were other circumstances that made Bhopal extremely hazardous. MIC was stored and used in relatively large quantities at this location. The large quantity of MIC was stored in a single tank. Finally, there was a large population literally at the plant boundary line. Consequently, the department's evaluation of chemicals concentrated on toxicity, volatility or boiling point, reactivity and use in New Jersey. These criteria should be considered preliminary at this time. However, we believe they provide a logical first cut to evaluate the chemicals of greatest concern. These four criteria were used to screen all chemicals for which there is a published workplace threshold limit value.

The key results of that screening are as follows: No chemical has been identified in use in this State with the combination of properties as dangerous as MIC. Six chemicals have been identified which, while not a serious risk, deserve more detailed evaluation. These are bromine, phosgene, phosphorus trichloride, ethyl mercaptan, allochloride and chlorine. The department has so far identified about 25 companies which use these chemicals and appear to do so in significant quantities. Cross-checking is found necessary to obtain a full inventory for these chemicals.

In the meantime, the department has begun to conduct inspections of the approximately 25 plants to determine the exact quantities of the chemicals stored and processed, the safeguards and the condition of plant equipment and whether or not emergency response procedures have been developed. The results of the initial inspections will be used to identify obvious problems, provide data

for worst case accident analysis, provide information for developing procedures for more detailed inspections and to identify state of the art industrial safeguards.

Thus far the department has learned that life threatening risks equivalent to MIC are not likely to be found. The chemicals which present substantial risk from accidental releases are likely to be few in number and that there are logical means available which must be used to reduce the risk of such chemicals. We finally learn that the governmental effort to identify and comprehensively evaluate such chemicals and implement better safeguards will probably be substantial but will be mandatory.

I previously mentioned that there was an unacceptable number of chemical release incidents over the last 4 months, especially in October and November of 1984. These incidents brought out two enforcement problems which have since been resolved by legislation in New Jersey. On January 22, 1985, Governor Kean signed into law S. 2480, which is sponsored by Senator Lesniak, which raises the maximum penalty to $10,000 for the first violation, $25,000 for the second, and $50,000 for the third and each violation thereafter. This law also requires immediate notification to my department for any accidental release of chemicals to the air. It complements our previously existing law requiring notification of all spills onto land and into the water of our State.

In addition, when repeat incidents occurred in January of 1985, the department ordered American Cyanamid and Du Pont to conduct environmental accident risk assessments for their Linden plants. I will submit copies of these orders for the record of this hearing. Under the order, each company must submit a detailed work plan prepared by an independent consultant outlining a plan to assess the potential environmental risk from accidental releases of chemicals into the environment. The work plan must address evaluations of equipment used for chemical use, storage, handling, and disposal at both Linden facilities. The work plans must address equipment design, operating procedures, preventative maintenance procedures, emergency response capability, and procedures for prevention and control of the accidental release of chemicals. The companies must undertake these studies by the independent consultants and must submit a remedial action plan including time schedules and engineering designs.

Upon departmental approval, the remedial action plan shall be implemented in accordance with the time schedule. In addition to ordering these two companies to conduct environmental accident risk assessments, Commissioner Hughey of my department also recommended that 36 other companies in the area voluntarily undertake similar assessments. Our review of these 36 companies is continuing and if necessary, orders to other companies will be issued.

Once again, I must stress that this type of preventive action we believe is the real key to public health protection from chemical accidents. Once an emergency release occurs, in most cases, in many cases, at least, it is over quickly and no Emergency Response Program, no matter how sophisticated, can prevent public exposure to whatever was released.

Having said that, let he hasten to add two thoughts. One, in the area of preparing for emergency responses to hazardous materials, New Jersey has been a leader. Our emergency response efforts have been compared to the quality of the Federal Government's best resources. Despite that, much, much more needs to be done before we can be confident of an ability to respond which is fully reliable and which will be effective at least in those cases where emergency response can make a difference.

There is one more major issue which must be mentioned. My department, indeed, the State of New Jersey is committed to a strong and comprehensive right to know legislation. This legislation is needed so that community residents and response personnel have ready access to vital information. Just as critical, this information is essential to developing a data base so that we can track the use and fate of toxic substances in the State. Information collected by our industrial survey during 1978 and 1979 provided information leading to the identification of numerous abandoned hazardous waste sites, many of which are now on the Superfund list. The industrial survey has also served the requirement of numerous enforcement activities and, for example, formed the basis of the department's dioxin investigations.

The community provisions of the right to know law are based on the industrial survey. Therefore, we want to know that a comprehensive right to know law is maintained in the State and we have worked recently with the attorneys working on the case to overturn the law and with the State legislature drafting a new right to know law. Furthermore, we urge the Congress when it considers Federal legislation for right to know to provide for stringent enforcement measures, to stupulate that States can levy fees to support programs, enable State agencies to develop centralized data bases for toxics information and place the burden of proof for trade secret claims upon the employers with clear criteria which must be addressed in order for trade secret claims to be upheld.

In terms of amending the Federal Occupational Safety and Health Act, the issue is not merely allowing States to develop more stringent standards than OSHA, States must be permitted to take over OSHA functions for single issues such as right to know or the whole concept of OSHA approval for State plans must be revised.

I would like to make several recommendations for actions to be taken to prevent releases of large quantities of highly toxic chemicals. The following actions must be directed at the few chemicals which truly need additional regulation and control, rather than all chemicals. We recommend that the Congress consider directing EPA new legislation in cooperation with OSHA to develop national selection criteria, to identify the probably small number of chemicals and situations with significant off property line life threatening risk resulting from a major accident.

Senator LAUTENBERG. I wonder, George, if I can ask you for a quick summary. We will place your full statement into the record.

Mr. TYLER. I was just about to conclude, as a matter of fact. Since we are cognizant of your time constraints.

Senator LAUTENBERG. OK. Thanks.

Mr. TYLER. What I was suggesting was that New Jersey's preliminary criteria might provide a starting point for a national legisla-

tion to identify chemicals of concern and that perhaps in cooperation with OSHA, EPA could be directed to develop a planning and a permitting program sufficient to prevent Bhopal type accidents from happening. We would also be recommending considerable acceleration in the hazardous air pollutant implementation under the Clean Air Act and possible consideration of new legislation directing FEMA to coordinate national emergency response programs for these selected chemicals.

I apologize for the length of my testimony, Senator.

Senator LAUTENBERG. You make up for it in quality, George.

Mr. TYLER. Thank you very much.

Senator LAUTENBERG. Thanks very much. I'm going to release a couple of the staff members, who have to get to Washington. Their help is deeply appreciated. We will continue and the record will clearly reflect all testimony which they will review in detail because a test is going to be given next week.

Dr. Parken, thank you again and all the others for your patience. I'm here listening, just as earnestly as I did when the day opened.

STATEMENT OF RICHARD GOLDSTEIN, COMMISSIONER, NEW JERSEY DEPARTMENT OF HEALTH, PRESENTED BY DR. WILLIAM PARKEN

Dr. PARKEN. Thank you, Senator Lautenberg. I would like to extend Commissioner Goldstein's apologies but due to scheduling conflicts, he did have to leave and asked me to present his testimony for him. I'm Dr. Wiliam Parken, the epidemiologist for New Jersey. I'm accompanied here by Mr. Richard Willinger of our right to know program.

While response to emergency incidents is considered a local responsibility in New Jersey, the department of health responds to the scene of major incidents in support of local responders, augmenting their staff and providing technical support.

In the event that the situation requires State intervention, the department of health, along with the department of environmental protection, functions as a part of the State response team under the direction of the New Jersey State Police.

The primary function of the Department of health's responders is to evaluate the health hazards both to the general public and to the emergency responders at the scene. We provide information to the New Jersey poison information and education system as well as hospitals and the medical community in the impacted area relative to the indentity and anticipated impact of toxic emissions and advise on specific treatments that may be indicated. As unique health issues arise, our responders address them.

Such issues could include health care facilities being threatened or impacted by toxic smode or possible contamination of foods, drugs or cosmetics by emissions from an incident. While on scene, DOH repondeers recommend appropriate protective equipment and/or procedures to the emergency repsonders and assist in DEP reponse actions. The department also provides laboratory support to both the DOH and DEP responders on an around the clock emergency basis, if necessary. We are also repsonsible for accessing the Federal health agencies as required.

In April 1980, the department formed a special unit, known as the emergency reponse unit, to react to these types of incidents. The emergency reponse unit consists of four individuals on call 7 days a week and 24 hours per day, who are backed up by physicians, toxicologists, epidemiologists, and sanitarians. Each primary responder has a van which contains protective, monitoring, communication, and photographic equipment in addition to a small scientific library.

Since the inception of this unit 4½ years ago, they have responded to 315 major incidents, an average of 72 incidents each year. Nearly 50 percent of these responses have been outside normal working hours and more than 60 percent have involved fires, explosions, spills, leaks, or venting incidents. Over 25 percent of the incidents occurred at industrial plants. More than half of the incidents had associated health complaints and also 40 percent resulted in individuals requiring hosptial emergency room assessment and/or admission.

Essential to the department's response activities is the emergency response plan. This document's primary value is the extensive listings of office and home phone numbers of selected DOH officials, key contacts in other State and Federal agencies, local health officers, and their backups and all hospitals in the State. This document is provided to selected DOH, DEP and State police officials as well as all health officers in New Jersey and is updated annually. The emergency response unit receives notification of incidents from a number of sources, the most frequent being DEP.

Not infrequently, however, the initial call comes from the State police, local health officers, local police or fire officials, private citizens or the news media. Since our personnel are on call at all times and each has a radio pager or beeper, they may be contacted around the clock. These individuals can also be accessed through the department's answering service, DEP's hot line and the State police's callout list. The department of health does not respond to every chemical accident which occurs in the State but only those where a health impact is suspected.

We must be informed of an incident in a timely manner to have the opportunity to respond on scene or even to assist other involved parties over the telephone with guidance on appropriate precautions, health effects or the toxic nature of the chemical. The Department of Health was notified and has responded to four of the incidents relevant to this committee's concerns, American Cyanamid on October 6, Du Pont on November 27 and American Cyanamid again on January 4 and 21. We learned of two to three additional incidents in the news media several days after each of those incidents.

The most common and critical problem we have is to determine what chemicals are involved at the scene. This identification is critical to all subsequent decisions on fire extinguishment and public safety and health. Not infrequently, with emergency incidents occurring at odd hours of the day, we encounter situations where knowledgeable individuals representing the facility cannot be located. In addition, even when we are successful in contacting such individuals, they are occasionally reluctant to release the information until they receive clearance from their superiors. The New

Jersey Worker and Community Right To Know Act was developed, in part, to prevent or greatly minimize these types of problems.

The Worker and Community Right To Know Act was adopted on August 29, 1983. Among its objectives was the intent to provide local health, fire, police, safety, and other government officials with detailed information about the identity, characteristics and quantities of hazardous substances used and stored in their communities. These individuals would then be able to plan and respond to emergencies.

Under this act, the department of health is responsible to conduct a work place survey whereby the employer would identify an annual basis any chemicals from the department's workplace hazardous substance list which his facility uses. This list currently contains 2,051 chemicals. The department of health also prepares hazardous substance fact sheets on each of these chemicals which identify the chemical and its acute and chronic health effects, potential routes and symptoms of exposure and proper precautions and protective equipment. They also detail how to handle fires, spills and other incidents and detail emergency and first aid procedures.

Concurrently, the DEP is conducting the environmental survey which details the chemicals at each facility, their use, quantities produced, brought in, consumed and shipped out, maximum inventories and methods of storage. DEP also is responsible for a more detailed survey of chemicals at each facility entitled the Emergency Service Information Survey. This information being collected by DEP and the health department is valuable to emergency responders in the often frenetic atmosphere surrounding the usual incident. The Right To Know Act and its associated regulations actively promote emergency response planning by allowing a waiver for the emergency services information survey if an approved emergency response plan exists between the facility and local fire officials.

Also, every research and development laboratory is required to assist local fire departments in preparing to respond to emergencies at each such facility. The department of health may also permit access to trade secret information when it is necessary for emergency public health or medical reasons.

On January 10, 1985, the U.S. District Court for the District of New Jersey ruled that the sections of the Worker and Community Right To Know Act relative to the manufacturing sector, SIC codes 20 to 39, were preempted by the Occupational Safety and Health Act of 1970 and the final rule entitled "Hazard Communication." These documents are limited in their scope to employers and employees in the manufacturing sector, unfortunately, and do not address the community or emergency response aspects which are in the preempted New Jersey law. Today, the Right To Know Act still fully covers the remaining facilities in New Jersey exclusive of the manufacturing sector.

As a citizen of New Jersey, you have a right to know what hazardous substances are present in your dentist's office or your local high school, for example, but not in the large chemical plant one block from your home. The State is currently appealing the preemption decision and pursuing new legislation to correct this bi-

zarre situation. It is too early at this time, however, to determine how this new legislation will specifically address the community's right to know about the hazardous chemicals used in the manufacturing sector.

I would like to support the concept that a national right to know law be seriously considered by this committee which would be modeled after the complete New Jersey law. This law should consider the community's right to know what chemicals are present in its midst as well as the employee's right to know what chemicals are with which he is working. Such a law should also require facilities containing hazardous substances to develop emergency response plans in conjunction with local and State authorities. Immediate reporting of accidental releases of chemicals through fires, spills, or similar incidents is essential in order to assure that proper decisions can be made to assure the public health.

Such a national law will not prevent fires or spills from occurring. However, it will permit a quicker identification of the exact nature of the problem. I believe the time is upon us to prevent unsafe conditions from existing facilities which could ultimately result in emergency incidents.

The nuclear power industry is overviewed by the Nuclear Regulatory Commission. No facilities may be built or even modified without review by the NRC to insure that the engineering features are sound. NRC performs continual inspections to make certain that this level of excellence is maintained. No one at any level, Federal or State, currently conducts similar programs to insure the safety of the construction, engineering, and ongoing maintenance programs of the manufacturing industry. A national program to issue operation permits to industries utilizing specific quantities of hazardous substances may be advisable.

I believe the time is now to address these issues and to take the steps necessary to assure that chemical and manufacturing facilities in New Jersey and the United States are safe.

Thank you.

Senator LAUTENBERG. Thank you, Dr. Parken. Excellent confirmation from what we said at the other side of the table.

Major, I'm happy to hear from you. Again, my apologies to you for the late hour, but please.

STATEMENT OF MAJ. HAROLD SPEDDING, NEW JERSEY STATE POLICE

Major SPEDDING. Senator, I would like to echo the comments of my predecessors. Thank you for having this meeting in New Jersey and we are very happy that the Federal Government chooses to become involved in such an issue. As a format to my prepared text, I would like to mention today we heard from experts from the private, Federal sector, State and local sector. I think one of the things we have to realize as far as emergency management goes is that in New Jersey, probably 98 percent of all the first responders are volunteers. They are not the highly paid, highly technical people that we have heard from today. The Office of Emergency Management in New Jersey is responsible for the overall training,

overall coordinated response effort dealing with these volunteers, as well as those large municipalities that do have paid staffs.

The New Jersey State Police has been actively involved in what was once known as civil defense/disaster control for over 40 years. During that period of time, while the civilian defense/civil disaster control effort fell under the administrative umbrella of the New Jersey Department of Defense, the State police was the primary response organization in many natural and man-made disasters that affected the State of New Jersey. From the infamous hurricane of 1944 to the northeaster of 1962, which devastated the New Jersey coastline, from the Woodbridge train accident in 1951 to the Newark-Bayonne train disaster of 1958, the New Jersey State Police reacted to meet its lawful mandate, that of protecting life and property.

In 1980, as directed by then Gov. Brendan T. Byrne, in Executive Order 101, the administration of civil defense/disaster control was transferred from the New Jersey National Guard to the New Jersey State Police and the office of emergency management was formed. As the superintendent of the New Jersey State Police, Col. Clinton L. Pagano was appointed the State director of the Office of Emergency Management on December 17, 1980. This administrative changeover coincided with the establishment of the Federal Emergency Management Agency [FEMA]. By Federal law, State, and local government is recognized as the primary responser in dealing with any disaster that may occur within their respective jurisdictions. The basic role of FEMA is to provide administrative guidance, input into the Federal response arena and to provide funding to support State and local programs in emergency management.

The State of New Jersey falls under Federal jurisdiction of FEMA Region 2, New York, NY. The State office of emergency management is currently staffed by 14 sworn members of the New Jersey State Police and a professional clerical staff of 41. The overall mission of the office of emergency management follows the dictates of the New Jersey Civil Defense Act of 1942 and 1952 as amended and chapter 438 of the Public Law of 1952 as amended. The responsibilities of the office of emergency management are outlined in New Jersey statute A:9-33 through A:9-57. The basic premise of these acts is A:9-33, which reads:

> The purpose of this act is to provide for the health, safety and welfare of the State of New Jersey and to aid in the prevention of damage to and the destruction of property during any emergency as herein defined by prescribing a course of conduct for the civilian population by the state. During such emergency, and by centralizing control of all civilian activities having to do with such emergency under the Governor and for that purpose to give to the Governor control over such resources of the state government and of each and every political subdivision thereof as may be necessary to cope with any condition that shall arise out of such emergency and to invest the Governor with all other power convenient or necessary to effectuate such purpose.

It should be noted that the term "emergency" is further defined in the statute as meaning to include disaster or war emergency as it relates to this section.

Under law A:9-40.1, each municipality of the State shall appoint a municipal disaster control/emergency management coordinator whose responsibilities legally include "the planning, activating, co-

ordinating and the conduct of disaster control operations within his municipality." In addition, A:9-42.1 mandates that each of the counties of New Jersey must appoint a county disaster control/emergency management coordinator whose responsibilities include:

> The development, coordination and activation of countywide mutual aid civilian defense and disaster control plans and for the activation of such disaster control and civil defense facilities and services as are available from the resources of county government.

With these laws as a legal format and with the wholehearted support of our current Governor, Thomas H. Kean, the State office of emergency management has welded local, county, and State managers into an effective and efficient emergency management family.

On the national level, New Jersey is recognized as having one of the finest emergency management programs in the country. Utilizing Federal funds, which amounted to $2,118,000 in fiscal year 1985, 77 counties and municipalities of the State of New Jersey have received over $1,020,000 for emergency management programs while the State utilized the balance to support emergency management programs on a statewide level. These funds are supplemented by a State input of $621,000 for the same period.

State funding is basically utilized from the salaries of State personnel, which amounts to $460,000, with the remainder being utilized for office maintenance, and expenses. It must be noted at this time that Federal budget cuts for fiscal year 1986 would adversely affect the role of State and local governments in emergency management. It has been widely reported that emergency management civil defense budget proposals over the fiscal year 1986 are being made in the amount of $120,000—I'm sorry, $120 million. This is a cut of over $60 million from the fiscal year 1985 budget. This may very well result in a 40 percent cut in Federal emergency management money received by the State of New Jersey. This reduction in funding would be detrimental to the citizens of New Jersey, a State that is certainly prone to the disastrous effects of both man and nature.

In order to accomplish the generally accepted emergency management tasks of mitigation, response, recovery, and reentry, the State of New Jersey is divided into three regions—regions one, two and three—representing north, central, and southern New Jersey. The State Office of Emergency Management is headquartered at State police headquarters in West Trenton. The six sworn State police members in the three regional offices act as regional coordinators and are the direct liaison with county and local governments. They are also the team that responds to any major emergency within their respective jurisdictions. They are supported by highly trained mobile State police TEAMS personnel, 10 in each region, who are the primary responders in the State police areas of responsibility and a State support function in other jurisdictions of the State. Staff personnel from the Office of Emergency Management also responds as necessary to provide for the availability of State resources and to act as coordinators for direction and control as required.

The planning bureau of the State Office of Emergency Management is charged with statewide planning necessary for an effective

emergency response. Their responsibilities include, but are not limited to, maintaining and updating the State natural disaster plan, which is the instrument that outlines local, county, and State responsibilities in the event of any disaster, either man made or natural. Plans for standard operating procedures are also maintained that relate to radiological emergencies in the Oyster Creek and Salem Nuclear Generating Stations. The State of New Jersey emergency casualty care plan, civil defense plan, population protection plan, and local and county emergency and management plans are likewise maintained. It is the State Office of Emergency Management's view that planning does not produce a product, but is an ongoing necessity.

The training bureau of the Office of Emergency Management provides training that relates directly to the overall mission of the organization. The training is offered to State, county, and local emergency management personnel and to actual first responders. During fiscal year 1984, 16 weekend courses were given at the Rutgers University continuing education center. These courses included emergency planning, analysis of hazardous materials, leadership and influence, and effective communications. Sixteen additional 1-day seminars were also conducted throughout the State for public officials and business and industry representatives. The Office of Emergency Management heavy-duty rescue school also conducted 37 courses in heavy-duty rescue techniques for fire companies, rescue squads, and industrial emergency units. It should be noted that this school is one of the few in the country. Attendees have included personnel from as far as Alaska.

The communications unit of the Office of Emergency Management is responsible for the overall coordination and maintenance of all statewide emergency communications equipment. Additional duties include overseeing national warning systems and supplying technical expertise to municipal and county governments.

Additional responsibilities of the Office of Emergency Management include the maintenance and calibration of radiological monitoring equipment and the training of radiological monitoring personnel to be utilized for either peacetime or wartime emergencies. Each of the sworn personnel assigned to the Office of Emergency Management have responded to hundreds of requests for speaking engagements in the past. These personal contacts are deemed necessary to promote emergency management on the grassroots level.

As a result of the severe spring storms during March–April 1984, the Office of Emergency Management acted as the State coordination agency and applied for and received, through the efforts of Governor Kean, a Presidential declaration of a major disaster for eight counties. This disaster required thousands of man-hours to effectively handle the joint recovery efforts of the Federal and State Governments. This recovery effort, still ongoing, resulted in over $160 million in Federal money being received as disaster aid to individuals and local governments. It was classified by the Federal Government as the greatest disaster recovery in the United States for 1984.

Still other responsibilities of the Office of Emergency Management include the overall planning and protection efforts directed toward the two nuclear generating stations located in New Jersey,

a hurricane study of the Absecon Barrier Islands, an engineering study of existing and potential evacuation shelters, which total over 18,000, and a complete cooperative effort with the military in expanding the State role of government in the event of a military mobilization.

The Office of Emergency Management realized early in its existence the potential hazards facing the citizens of New Jersey from possible exposure to dangerous chemical releases and/or spills. Efforts to alert the municipalities of New Jersey have been made and are continuing. One effort required each municipality and county to prepare a hazard vulnerability study of their respective jurisdiction to point out areas warranting special attention in planning efforts. These areas include chemical users and manufacturers, refineries, toxic waste sites, pesticides storage areas and a host of other facilities where toxic products are used or stored.

The role of the Office of Emergency Management in responding to a toxic release is to assist the municipality in whatever way possible. A major concern is to insure that all residents within the danger area are advised of the proper protective measures necessary to protect life. This action is immediate regardless of the location and even extends over State boundaries, that is, the New York City metropolitan area.

Since October 1984, the Office of Emergency Management personnel have responded to 15 potential emergencies in the Linden, NJ, area alone. These emergencies included the American Cyanamid release of crude Malathion, which occurred on October 6, 1984, and the release of approximately 10 gallons of Oleum from the E.I. du Pont Co., Linden, NJ, which was the result of a disconnected valve flange on a transfer line. The Oleum release was reported to the Office of Emergency Management by a local fire department without notification by the Du Pont Co.

An investigation by State and local emergency responders pointed out the source of the release, which was confirmed by plant officials. On December 2, 1984, a substantial release occurred from the catalyst recirculation system of the Exxon Refinery Co., Linden, NJ, which resulted in reports of chemical dust spread up to 15 miles northwest of the facility by the next day. This incident was reported by Exxon to this office. The incidents of similar chemical releases and/or spills are indicated on the attached report.

It should be noted that since October 1984, the majority of the corporations responsible for chemical releases have fully compiled with State regulations and reported their mishaps to both the Department of Environmental Protection and the New Jersey State Police. Corporate officials in each instance have been fully cooperative with representatives of the New Jersey State Police and full details of each release have been made and have been documented. Each of these incidents were resolved without loss of life. Companies in violation of State laws have been dealt with by the Department of Environmental Protection.

It should be noted that all State agencies within the framework of State government have accepted their responsibilities under the New Jersey State natural disaster plan and have fully cooperated in every instance with their full resources as required by the State office of emergency management. Of particular note is the coopera-

tion extended to this office by the Department of Environmental Protection. The State office of emergency management does not have the highly technical expertise necessary to track and to identify chemical sources that may be emitted from the numerous chemical producing/manufacturing facilities located within this State. Therefore, it is the cooperative spirit of the Department of Environmental Protection and their highly trained personnel who enable the State police to fully execute their duties and responsibilities as it relates to the identification and possible hazardous impact from any chemical within the State of New Jersey that may be released with the potential to harm the citizens of this State.

New Jersey Worker and Community Right To Know Act of 1983 was considered a major achievement by the office of emergency management. This law, as enacted, provided not only the worker and community with details of toxic chemicals used, manufactured and/or stored within their surroundings, but also provided the emergency responders, the firemen, policemen, and emergency managers with the necessary information vital in dealing with emergency situations.

Recent legislation such as the Lesniak bill, senate No. 2480, placed additional responsibilities on the chemical industry and provided substantial enforcement power for violations of the bill.

The State office of emergency management supports all legislation, either State of Federal, that is designed to protect the lives and property of the citizens of this State. The office of emergency management is fully capable of handling its legal responsibilities under the law, given the full support of the State and Federal Governments.

Thank you very much.

[Attachments to Major Spedding's statement follow:]

Attachment No. 1

Chemical Releases
During October 6, 1984 thru January 1, 1985

10/6/84 American Cyanamid, Linden - release of crude Malathion from storage tank. Reported to state/local officials. Estimated 101 persons treated at area hospitals. Odor extended over 20 miles from emission point.

10/29/84 Exxon Refinery, Linden - release of hydrocarbons and hydrogen sulfide from malfunctioning flare. Waste streams being received from Exxon West Side Chemical Plant process. Not reported by company, as they were unaware of emission until we investigated what turned out to be 111 citizen complaints. No persons reported hospitalized. Odor extended over 20 miles from emission point.

10/30/84 Exxon Refinery, Linden - release of hydrogen sulfide, sulfides, mercaptans, hydrocarbons and related petro-chemical air pollutants from Refinery processes, including, but not limited to, the ABW Flare, Waste Water Treatment Facility, Desulfurizer and related equipment. Exxon unaware of fugitive emissions until we investigated what turned out to be 15 citizen complaints--no persons reported hospitalized. Odor extended westward across Linden, into adjoining Union County communities.

11/9/84 E.I. DuPont, Linden - release of approximately 10 gallons of Oleum, as a result of a disconnected valve flange on an SO_3 transfer line. Local fire department made notification to us. Vapor cloud impacted nearby industries--no injuries reported. Vapor cloud dissipated upon leak being stopped.

11/16/84 Union Carbide (Keasbey), Woodbridge - release of 500-600 pounds of anhydrous hydrogen chloride from tube trailer, as the result of an in-plant accident. At least three persons at a nearby company were affected by plume--they were not hospitalized. County Emergency Management officer made report to us.

11/27/84 E.I. DuPont, Linden - release of approximately 3 gallons of 65% Oleum, as a result of a mechanical pump seal failure at the 40% Oleum operation area (1015 hours). No company notification made. Approximately 40 persons working at Goethals Bridge overcome by vapor cloud. Vapor cloud dissipated upon adequate ventilation/dispersion in atmosphere. Source not uncovered until 1400 hours, after door-to-door investigation by Middlesex County OEM Air Pollution Unit.

11/29/84 Merck & Co., Rahway/Linden - release of approximately 25 gallons of monochloroacetone from MCA Distillation Column. Release resulted in complaints from Linden Police and

nearby warehouse employees. Complainants experienced burning and tearing of eyes, as MCA is a lacrimator. Leak not reported by Merck; occurrence uncovered by follow-up investigation next day by this office.

12/1/84 Ritter Transportation, Inc., Rahway - release of butane and associated methyl mercaptan from tank truck. Four persons treated at area hospital and released. Leak not reported by company. Clean-up contractor brought to site to remove material "frozen" on the ground.

12/2/84 Exxon Company (Refinery), Linden - release of substantial quantity of catalyst (aluminum silica) from cat cracker catalyst recirculation system. Release attributed to power dip from P.S.E. & G., causing Refinery processes to go off line. Pressure release valve at catalyst recirculation system blew and catalyst was emitted for approximately 30 minutes. Reports of dust from 10-15 miles northwest of facility received next day (daylight hours). Company reported incident to this office shortly after inception of incident.

12/3/84 Nuodex, Borg Warner, Inc., Woodbridge - release of approximately 10 lbs of phosphorus oxychloride from storage tank/transfer operation which resulted in evacuation of Nuodex and adjoining company (Sherwin Williams) employees. Company did not think emission left plant, and therefore, was not reported. Anonymous call to this office prompted follow-up investigation.

12/11/84 Ethyl (Saytech) Corporation, Sayreville - release of approximately 5 gallons of Bromine to caustic scrubber, which couldn't neutralize surge fast enough. Overloaded scrubber plume discharged to outside air. Condition controlled within 5 minutes by adding caustic to scrubber. Reported to state and local authorities. No reports of injury, no complaints received.

12/19/84 Ethyl (Saytech) Corporation, Sayreville - release of undetermined amount of Bromine from overpressurized delivery vessel into caustic scrubber which couldn't neutralize volume fast enough. Overloaded scrubber suspected to have released vapor cloud, including approximately 1 pound of liquid Bromine. No report made by company to any authority. This Program received complaint of "orange smoke" from passing motorist. No report of injury.

1/4/85 American Cyanamid, Linden - release of 1150 gallons of Dimethyl Phosphorochloridothionate - approximately 50 gallons of which was in fugitive vapor form--from a 1500 gallon process storage tank. Reported to State and local officials. Areas of major impact were south/southwest; Carteret, Staten Island, Monmouth County - Bayshore Area.

One person reported to have sought hospital treatment for nausea.

1/14/85 American Cyanamid, Linden - release of approximately 10 gallons of 35% Oleum, as the result of a leaking elbow and related equipment at the Sulfur Acid Plant. Release resulted in vapor cloud and some liquid to ground. Steps taken immediately to abate leak and neutralize spill. Reports made by company to state and local authorities. No reports of injury.

1/21/85 American Cyanamid, Linden - release of approximately 560 gallons of Insecticide O,O,-Diethyl-S - (N-Methylcarbamoylmethyl) Phosphorodithioate - Company name "Cygon 400." Release resulted from suspected failure of temperature controller on Tank 170-3 at Building #49. Material classified as Organo Phosphate. Vapor cloud resulted in complaints from as far away as Nassau County. State and local authorities notified. Reports of foul odor, no reported injuries outside plant. Several company workers impacted by release tended to by plant medical personnel.

Attachment No. 2

New Jersey State Courses for FFY 84
New Jersey Office of Emergency Management

Course Name	Date	Students	Hours	Instructor
Emergency Planning	9/23-25/83	29	10¼	J. Huber
Creative Financing	1/7-8/84	25	14½	J. Kozak
Emergency Management Workshop	1/27-29/84	35	14	V. Puckwald
Radiological Defense Officer	1/27-29 2/3-4/84	17	27¼	J. Maschuci
Emergency Planning	2/24-26/84 3/2-3/84	32	36	J. Huber
Analysis of Hazardous Materials	3/16-17/84	50	9	J. Ross
Radiological Defense Officer	3/16-17/84 3/23-24/84	16	27½	J. Maschuci
Analysis of Hazardous Materials	4/27-28/84	38	9	J. Ross
Leadership & Influence	5/18-20/84	23	22½	J. Arena
Emergency Operations Workshop	6/1-3/84	13	16	J. Kozak
Radiological Defense Instructor's Workshop	6/8-10/84	16	17	J. Maschuci
Intro. to Emergency Management	6/15-17/84	6	36	J. Tatum
Analysis of Hazardous Materials	7/13-14/84	27	9	J. Ross
Effective Communications	8/17-19-84	16	16	J. Arena
Emergency Planning	9/7-9/84 9/15-17/84	29	36	J. Huber
Analysis of Hazardous Materials	9/21-22/84	29	9	J. Ross

Attachment No. 3

New Jersey Office of Emergency Management
Pre-Day Seminars

Public Officials Conference	November 23, 1983	Camden County	30
Business & Industry Conf.	January 25, 1984	Elizabeth	90
Hurricane Loss Study Conf.	March 13, 1984	C.I.& Atl. Co.	25
Public Officials Conference	April 6, 1984	Ocean Co.	95
Business & Industry Conf.	May 3, 1984	Newark	90
Public Officials Conference	May 25, 1984	Smithville	30
Public Officials Conference	June 12, 1984	Cape May Co.	25
E.M. Workshop/Co. Coord.s	June 15, 1984	Atlantic City	48
Public Officials Conference	July 14, 1984	Monmouth Co.	70
Public Officials Conference	July 18, 1984	Newark	50
Public Officials Conference	August 21, 1984	Passaic Co.	63
Public Officials Conference	September 11, 1984	Newark	60
Public Officials Conference	September 14, 1984	Bergen Co.	52
Public Officials Conference	September 25, 1984	Salem Co.	43
Public Officials Conference	September 26, 1984	Middlesex Co.	80
Public Officials Conference	September 27, 1984	Woodbridge	77

Attchment No. 4

New Jersey Office of Emergency Management

Light/Heavy Rescue Training

Month	Number of Courses	Persons Attending
October	4	50
November	3	38
December	2	29
January	3	38
February	3	42
March	3	45
April	0	0
May	4	46
June	6	65
July	3	30
August	2	23
September	4	56

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Senator LAUTENBERG. Thank you very much, Major. I have watched with interest. You had a lot of material to cover, very good material. I allowed you about 10-percent overtime and you were pretty good. Thanks each one of you.

I'm going to ask a couple of questions. I would say this: It's very likely we will submit questions to you in writing. Anything that you want to submit for the record we welcome so that we will keep the record open if there are questions that we submit to you and we would appreciate a quick response. It's an excellent panel.

I want to ask Tom Burke to briefly describe the industrial survey and environmental survey under the New Jersey right to know law, why it's important. American Cyanamid said they are no longer storing a quantity of hydrogen cyanide that they had at the union plant. Doesn't this point out the need to update inventories?

Dr. BURKE. I think you are absolutely right in that observation. The industrial survey, which I think many would acknowledge is the only such survey of its kind in the country, actually started out as a grant with seed money from TSCA in 1978. We were limited to a one year effort and from that, I think we can see many programs that were offsprings from that initial effort. It certainly gave us the first cross-media look at toxic substances, gave us the first idea of what the various emissions were and how, say, water emissions compared to air emissions and we saw the right to know legislation as an opportunity to not only update that, to expand it to more industries and to make it more useful in terms of having teeth and enforcement efforts because as it was, it was pretty much a voluntary effort but still provided the background and the basis for an awful lot of environmental programs.

The information in the industrial survey, despite all the positive things you did here today, is not universally available and not in other states, not to the Federal Government. That's a unique set of data and I know we are lucky to have that in New Jersey. It is, I think, in a State like New Jersey, absolutely essential that we have the power to update that. It's unfortunate that something so environmentally related was preempted under an OSHA standard or regulation and I think we are working hard to overcome that now and get back into, through the right to know, the intent of the industrial survey.

Senator LAUTENBERG. That's one of the principal reasons for our interest and our legislative initiative, because it ought not to be preempted where a stricter standard is required for the preservation of the good health and safety of the citizens. I couldn't agree with you more. I was interested in Dr. Parken's statement, the same thing. We ought to know what is out there. The community has a right to know. The potential for disaster is far greater and people, as they said here, don't know what to do. Well, most call 911. I didn't even realize, Major, until you mentioned it, the very significant role that our excellent State police department plays and the role which we normally see involved in the emergency response portion.

I wanted to ask Mr. Ross how much training is there of firefighters and is it standardized in the State? I guess the obvious answer to is it funded enough, it probably doesn't even need response. Our

community meetings showed unpreparedness. What can you tell me about that in short form?

Mr. Ross. There is an effort on the part of the DEP and the State police and you are correct, it is not funded. Most of the training programs of the State police and DEP present are meagerly funded. The programs are usually presented to volunteer fire companies as one night stands, meetings through the efforts of the New Jersey State Safety Council Fire College and anyplace anybody will have us, essentially. It's offered for free and most of them, I might say, are usually given in the evening during the free time of the volunteers.

Senator LAUTENBERG. Is there interest?

Mr. Ross. The interest is overwhelming.

Senator LAUTENBERG. Is that right? So people want to know——

Mr. Ross. I can show you my calendar, it looks like a road map.

Senator LAUTENBERG. I would appreciate it if you could give us, send in a writing, Liz Barratt-Bown can be in touch with you, just what kind of response, what kind of interest, what kind of concern is being expensed by response officials and the community.

The EPA involvement is training of response officials, is primarily for action at Superfund sites, if I am correct. If they are willing to train people to deal with the Superfund sites, perhaps we need an extension of their capability and service to train people for emergency response occasions.

Mr. Ross. That's correct, the EPA has a training program. As a matter of fact, I might point out members of our own department have attended it. I might point out it is a 5-day course, it is 30 personnel, so obviously, there aren't enough days in the week to cover the some 14,000 emergency volunteer-type personnel in the whole State. The Department of Environmental Protection has augmented this by providing programs similar in scope in nature ranging from decontamination, radiation, protective clothing, and we present these, also, to fill the gap. It's still a gap.

Senator LAUTENBERG. I want to thank all of you, those, of course, from my home State but our neighboring State, as well, because we are, I think, an enlightened region. We are aggressive about our business-getting opportunities, about our jobs. We are also concerned with our safety of our families and our friends and neighbors and I'm also pleased when I say that I represent the State of New Jersey as well as the national interest, which I'm obliged to do, I point with pride to some of the very progressive and enlightened programs that we take upon ourselves here.

Major, you pointed out something in the testimony that was read about budget cuts and those are some of the hidden, let's say, effects. People don't see that until it's too late, recognize how painful that might be, but those kinds of programs are going to be under severe attack as we review the budget for 1986 and when you identify the magnitude of the cut for emergency assistance, for emergency management, it's enormous and we can't afford to let that go by unnoticed. I pledge to each one of you, including, again, our neighbor from across the river, whatever support I can give you, we invite your comments and I appreciate your taking your time and your patience and waiting your turn. Thanks very much.

We have a lone survivor, Mr. Jim Lanard. Jim, if you have the endurance, we have and we are pleased that you are able to hang tough and hang in. We are pleased to have you with us and invite you to go ahead. Identify your group, please, and go ahead.

STATEMENT OF JIM LANARD, NEW JERSEY ENVIRONMENTAL LOBBY

Mr. LANARD. Thank you, Senator. My name is Jim Lanard. I work for the New Jersey Environmental Lobby, which is a lobbying coalition of environmental groups in our State. In addition, I'm representing the National Campaign Against Toxic Hazards, which asked me to include them in the groups we are representing.

Senator Lautenberg, my background in this issue goes back to 1980 or 1979, when I first was working in Philadelphia with an American Lung Association affiliate and we began working on the first community and worker right to know law in the country. That was a law through the city of Philadelphia that was passed and was a precedent setting effort. I left Philadelphia and moved into New Jersey in early 1982 and became the cochair of the New Jersey Right To Know Coalition and worked on and developed that legislation very closely with our friends in labor and with the legislators, Senator Dalton, especially, in developing this bill and seeing it pass into law.

Let me relate to you one experience I had in early November, when I was in Carteret, NJ, and was canvassing in the senior citizens project, talking to folks about environmental issues, but having them tell me about problems that they experienced and not soliciting any specific information. Three of them, in fact, brought up a matter of something that occurred in the middle of October, when they were inside on a Saturday watching television, listening to the radio, doing their cleaning, when they heard police sirens and police loudspeakers. They did not quite understand what the message was. They came out, they went onto the streets, they talked with one another, and these were all senior citizens, to find out that what the directive was from the police department was an evacuation order based upon a release of pesticides from one of the Linden plants. They did not hear that information and as they were talking about it, and finally understood what the order was, the fume cloud actually came over and they breathed it and were exposed, much greater than had they stayed inside and not had any evaucation.

So the magnitude of the problem is not just to tell people to get out, but it's to teach them what it means to get out.

The question that most impressed me today from you, which you continually asked almost every panel and almost every member of every panel, which was not adequately answered to our specifications, is what should the national right to know be and first let me answer that question, if I may, and tell you what it should not be. It should not be the OSHA hazard communication standard because of the following reasons: No. 1, materials safety data sheets which are required under the hazard communication standard to be provided to employers are written by specific manufacturers of the products. There is no uniformity whatsoever and that is, if one

company is using an MSDS from one manufacturer, and another company is using the same chemical from another company, their MSDS's are different because they are written differently. There is no quality assurance whatsoever and therefore, the gaps in information from one MSDS to another is substantial.

As I think about this, maybe we can supply your staff some of the differences of the same chemicals. Toluene comes to mind, benzene comes to mind, where there are major differences in what companies are communicating to workers. So there shouldn't be in the hazard communication standard the MSDS, manufacturers provide the chemical. Second, we should not allow the chemical companies to choose which chemicals they determine are hazardous. We should not give them the authority and the discretion to do that. I guess the easiest way to try to convince you of that argument is if they haven't already determined that those chemicals are hazardous, that is, if workers have been using these chemicals for the last 20 or so years, what incentive does a chemical company have to tell that worker oh, by the way, it's hazardous and we haven't told you for the last 20 years? No incentive at all. That's what the OSHA hazard standard provides, it allows the employer to communicate which chemicals are hazardous.

The national right to know law should also not exclude a community right to know. It also should not be voluntary. We have heard about some hazardous waste and hazard management advisory councils today. What concerns me is the word "advisory." They are simply only advisory and they can't mandate protections. So while it's important to start the public education effort and we commend Senator Lesniak's effort in working with advisory councils, we should be cautious about what the implications of those are.

Finally, the New Jersey State Legislature, which we have a lot of respect for, rejected the hazard communication standard because when they were considering the New Jersey worker in the community right to know law, they saw the proposed OSHA standard, they rejected it. The chemical industries came to them day in and day out and said you must accept this, it's much better, much more uniform. Senator Dalton, Governor Kean, the entire legislature rejected what they proposed because it was meaningless as far as real community worker and emergency response protections that were offered under it and we think that our legislature did fully consider it and when they rejected it, it was much different than when OSHA, with its staff, without legislative oversight or whatever, made its decision to preempt New Jersey type right to know laws. Whereas we had 120 persons of the legislature and the Governor and their staffs reviewing this, we were competing against a very small OSHA staff.

The verdict was in, the Governor signed it. When he signed it, he said New Jersey will now be known as the safest State in the Union because of that. If you haven't obtained his speech, it was a marvel in what he proposed and why he supported this law and why he felt there was a need for it and that would be a good inclusion in the record.

Let me tell you what I think it should be: It should include workers and community for a national right to know. It should include

almost all the provisions in the New Jersey law and let me just be specific with several and address a couple of misstatements made by some of the chemical representatives here today.

Under New Jersey law, there is something that is known as the hazardous substance factsheet. The hazardous substance factsheet, we determined and the legislature determined, should be written by the State department of health so there would be uniformity. Every user of that chemical would get the hazardous substance factsheet written by the State, its experts, and by the way, they are hiring consultants to draft these because they are complicated. We did not want to leave it to the discretion of the many manufacturers.

In the hazardous substance factsheet there are several criteria. I will read some of them from under the New Jersey law. You were told, No. 1, the companies would have to rewrite their MSDS's if they used the New Jersey law as the national standard and you also heard comments made that the New Jersey standard was sort of ridiculous. That may be somewhat of an overstatement.

Senator LAUTENBERG. The word was its stringency made it ineffective.

Mr. LANARD. You can interpret that. But the point was they said it was stringent in some areas and not so stringent in other areas, specifically too many names of chemicals, not enough hazard communications.

Let me read you specifically what the hazardous substance factsheet shall include as a minimum. No. 4, besides the chemical name, the hazardous posed by the hazardous substance including its toxicity, carcinogenicity, mutagenicity, teratogenicity, explosiveness; second, description in nontechnical language of the acute and chronic health effect of exposure to the hazardous substance, including medical conditions that might be created by exposure; and limits by OSHA. This is in direct contradiction to what you heard, so we hope the committee will consider the New Jersey law does provide the information.

Senator LAUTENBERG. Is that information available?

Mr. LANARD. Oh, yes; in fact, it's right in the law, in the worker and community right to know law.

Senator LAUTENBERG. Mutagenicity. Is that one word you used?

Mr. LANARD. Yes.

Senator LAUTENBERG. And that is available on a chemical by-chemical-basis?

Mr. LANARD. I should say I'm not a scientist. What I understand from the state of the art is there are a tremendous number of resources available that the State department of health is researching. In fact, they are documenting all the research facilities and documents that they are using when they include information. So there may be factsheets that say mutagenicity, unknown, and they would say, I assume, these documents have reported it. We are not sure.

Senator LAUTENBERG. It's essentially the equivalent of sworn testimony because it's required under the law. If someone says I don't know, they had better darn well not know, right?

Mr. LANARD. Exactly. What else the national right to know law should include is that it should include a mandate that directs the

chemical companies which chemicals to label. So it's got to have labeling and it should not be left to the discretion of the companies, it should be dictated by the Federal right to know. It should also include comprehensive community right to know and by our definition, that would include community residents, firefighters and other emergency response personnel, including local health officers, too, and it should be uniform.

I'm persuaded when I hear the chemical industries comes into New Jersey and say to our State legislators you know, if you pass this law and there are 19 other State right to know laws, we are going to have a hell of a mess. I'm persuaded because it makes logical sense and if we had an administration in Washington that really could demonstrate commitment to health and safety, I would feel that that is an argument we should take them up on. We can't rely on the administration. OSHA has shown its hand by publishing this hazard communications standard and that's why we come before you today to ask you to take over OSHA's responsibility by legislating and mandating what OSHA has failed to see as necessary, but I will qualify my answer another way, too, and that is when they talk about 19 or 20 right to know laws around the country, we have looked at those laws and looked at what the labeling requirements would be because there aren't too many laws that have labeling. We could still get it on one label.

So when they talk about uniformity and they say this label here and this label here, you put them together, it's still one label. You could even include the OSHA hazard communication labeling on there and it wouldn't be that big. Take a look at a bottle of fingernail polish regulated by the FDA and see 30 or 40 chemicals on the back in a one inch square. If the Federal Government does not adopt national right to know, but takes the next step, which says States, you can do it yourself, I guarantee you you could still have a uniform label that the companies would have to then choose to provide New Jersey information out in Wisconsin but maybe they would want to do that, anyway.

You had asked about the industrial survey, which is something that is probably crucial in right to know. I think it's one of the best efforts that the State DEP has undertaken and I would like to address a few things and your staff is familiar with this information, so I will be very brief but mention that my source comes from Inform, which is an organization in New York that does research on harzardous substances, and they asked questions about what type of chemical information is available now, without the industrial survey and without right to know.

And they found out that right now, in a New Jersey chemical plant, excluding information from the New Jersey industrial survey, that they could not get information about raw materials coming in, what raw materials are leaving as part of the finished product, what is the water discharge for this specific chemical concerning public water and sewage treatment plants, what are the water discharges for surface water, what are the RECRA permit requirements, what incineration emissions are occurring and what other air discharges are occurring.

If they took a look at one chemical, they could not answer these questions. They did not answer them and for the record, we will

submit a wonderful graphic that explains what could come in, what couldn't come in. Then they applied the industrial survey data to those same sets of questions and they found out almost all the answers were there. This is a meaningful study. This creates the data base which many of your witnesses today have proposed and what I think we would love you to do is to include this in national right to know, that the industrial survey data base be mandated, that it be computerized. We know we can do that. We don't have to build annexes onto the firehouse and we can move forward so that the public and firefighter emergency response can really have meaningful information.

I want you to know, also, that it has been reported to me, and I can't corroborate this, but I'm sure you can, that the Du Pont Co. has refused to let the industrial survey information be made available to certain interests including, I believe, Inform. Again, this is an uninformed comment but I trust my sources and if this is the case, then you have had a witness today talk about the openness of the company when at the same time, they are refusing to provide the hazard information from the industrial survey.

Senator LAUTENBERG. I wouldn't want that to stand on the record without some challenge, Mr. Lanard. You are an attorney and you know we can't let the last word——

Mr. LANARD. I tried to qualify my comments by saying it was uninformed comment.

Senator LAUTENBERG. We will take a look at that. But I don't want to condemn the Du Pont people. We will send them a letter and ask them the question.

Mr. LANARD. And I will send an apology if it's appropriate.

You were also moving in the direction that I was very excited by and I think because of time limitations, we didn't follow through completely, and that has to do with what real involvement the community should have. I will call it the right to inspect and let me tell you how that has worked for me as an attorney representing a community group in Philadelphia before I left. There was a warehouse that was discovered owned by the General Electric Corp. storing a tremendous number of PCB's in barrels. It was in a residential area and the citizens took to the street, they shut down the Tacony-Palmyra Bridge, the mayor shut down, or the managing director at that time, Wilson Goode, closed it and said he was willing to open it when conditions were met. I, as the attorney for the union, we ended up opening up the building very soon that allowed the community residents or their designated leaders to look at the building every 2 weeks, to look at the manifest, what was going in and what was coming out, to survey the facility and in the first few weeks, they found a significant number, three or four drums of PCB's that were actually leaking that their own inspectors had not discovered. Greater cooperation. The end result was that our contract called for the warehouse to be empty within 18 months. We let it go on for another 18 months because we were so confident in the storage and we developed a trusting relationship with the company. So right to inspect does work. It is a somewhat aggressive idea, but I think it's something that should be considered.

Just a few other comments and I suspect you are going to want to——

Senator LAUTENBERG. We will take anything for the record you want to give us. The testimony is very interesting and it poses view which I'm not surprised exists. But if you could keep it short, we will take anything you want to submit for the record.

Mr. LANARD. I'm tempted to stop but I can't. I don't have that kind of discretion. Let me give you a few last comments.

Senator LAUTENBERG. You have the discretion. It's your choice.

Mr. LANARD. You are the Senator, Senator. OK.

You asked Union Carbide a question and let me qualify it by asking you to comment back to the record that we have this balance here, whether the New Jersey right to know law should be the standard, should be the national standard. Dr. Pyle answered "I don't know." That's his exact words. And I was disappointed, to say the least, to hear that comment. One would think after Bhopal that Dr. Pyle would have studied all the different hazard communication proposals, including the New Jersey law, to determine what should be the industry standard imposed, if necessary, by the Federal Government and I wonder what is Union Carbide doing if they are not looking at the New Jersey law which we feel would like to see imposed on the industries in our State? We know that the American people learned from what happened in India.

We know that they will follow your lead, as you do lead, we hope, for national right to know, and I just have one last comment and that has to do with the comments about new legislation that had to do with fines to get the companies to keep their emissions to themselves and not share them with the community. It's unfortunate that we need fines because their responsibility should be greater than trying to save their shareholders the funds that it is going to take to pay for these fines. If they don't have that responsibility and we need economic sanctions to get them there, then I think we are in a terrible state of affairs and we need to do more to get local government and citizens involved in the oversight because the fine structure will only work if it's enforced and if the fines are collected.

You have been invited to a conference on March 20 and 21 in Newark sponsored by both workers and by the chemical industry on Bhopal. I'm going to just submit the notice of this to the record. You have also been invited to speak at that and we hope you will consider it based on all the information you learned today and would agree at some point to participate because the insight that this committee learns from this hearing would be valuable at that conference.

Thank you very much.

Senator LAUTENBERG. Thanks, Mr. Lanard. We will submit any requests for information to you and I promise you that the point of view that you brought brought great interest to me. The response to some of the questions was at times tepid, but I really do think we are making progress. I wouldn't fault the company for not seizing to be governed by the strictest the standard.

However, I believe that if we had the strictest standard as our model, and it was universal, I think it's the full embrace, OK, this is the way it's going to be in every State in this country and that's

why one of the things that I took some exception to, we didn't get a debate about it, was the observance of one, that observation by one that Federal legislation and response, et cetera, wasn't really necessary. It's not necessary if you live on the other side of, if I can call it, the street and you don't wind up the recipient of the material. If it always blows the right way and passes over your head, sometimes it's easy to ignore it. But I don't feel that way and I am not committed to Federal bureaucracy or entanglements, I'm committed to the health and well-being of our citizens. That's my responsibility.

We here in New Jersey fortunately face, in general, a fairly prosperous society and the question uppermost on people's minds is am I safe living here, are my kids safe, can I drink the water, breathe the air, and I feel relaxed about the environment I live in and I feel relaxed about those generations yet to come. So it is a matter of great interest to me. I appreciate your participation. We are closing this session.

I do want the record to show that the New Jersey Institute of Technology and its president have been most cooperative. They have made it easy to function. It took longer than we wanted the program to take but there was a lot of information.

As a matter of fact, the session of this hearing said something, and that is we didn't devote enough time to it. There is a lot of information to gather. But I think that we got the essentials that we had to cover and that ultimately, the legislation that's going to be produced is going to be better for having held these hearings.

I thank everybody who participated, including my staff and the patience of the great stenographer. I don't know what kind of muscles he has got in his fingers, but we thank you and assume you have got all the information there. Thanks everybody. This hearing is concluded.

[Whereupon at 4:55 p.m. the hearing was concluded.]

[Statements submitted for the record follow:]

STATEMENT OF HON. JAMES J. FLORIO, CHAIRMAN, SUBCOMMITTEE ON COMMERCE, TRANSPORTATION AND TOURISM

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, I WELCOME THE OPPORTUNITY TO APPEAR BEFORE YOU TODAY AT THIS EXTREMELY IMPORTANT HEARING CONCERNING THE RECENT OUTBREAK OF CHEMICAL INDUSTRY ACCIDENTS IN THE LINDEN AREA. NEW JERSEY RESIDENTS HAVE GONE FROM RESTLESSNESS, TO FEAR, TO A DEEP FRUSTRATION OVER THE ESCALATING SERIES OF THREATS TO THEIR HEALTH AND THE ENVIRONMENT. THERE IS A FUNDAMENTAL BREAKDOWN IN THE SYSTEM WHICH SHOULD PREVENT SUCH INDUSTRIAL DISASTERS.

OVER THE LAST THREE MONTHS THERE HAS BEEN AT LEAST ONE INCIDENT A WEEK IN THE LINDEN AREA INVOLVING THE SUDDEN RELEASE OF HIGHLY TOXIC CHEMICALS INTO THE AIR. THE MOST SERIOUS INCIDENT, INVOLVING AN AMERICAN CYANAMID PESTICIDE PLANT, SHOWERED STATEN ISLAND WITH A TOXIC CLOUD OF CHEMICALS ON OCTOBER 6 AND SENT AT LEAST 160 PEOPLE TO HOSPITAL EMERGENCY ROOMS.

THIS DISTURBING TREND OF INDUSTRIAL ACCIDENTS WAS BROUGHT TO A CLIMAX LAST WEEK IN MIDDLESEX, NEW JERSEY WHEN AN EXPLOSION AT

A PAINT FACTORY KILLED ONE PERSON, INJURED SCORES OF OTHERS AND FILLED THE SKY WITH A BILLOWING CLOUD OF TOXIC FUMES FOR SEVERAL HOURS.

IT SHOULD BE CLEAR THAT THE TOXIC RELEASES WE HAVE SUFFERED ARE BY NO MEANS UNIQUE TO NEW JERSEY, THEY ARE OCCURRING ACROSS THE COUNTRY. EVEN MORE FRIGHTENING IS THE PROBABILITY THAT IF OUR EXPERIENCE IN OTHER PARTS OF THE COUNTRY IS APPLICABLE TO NEW JERSEY, THERE ARE MANY MORE RELEASES THAN WE KNOW ABOUT IN LINDEN.

IMMEDIATELY FOLLOWING THE TRAGEDY IN BHOPAL, INDIA THIS PAST NOVEMBER, CONGRESSMAN HENRY WAXMAN AND I CONDUCTED A HEARING IN INSTITUTE, WEST VIRGINIA REGARDING THE OPERATION OF A UNION CARBIDE FACILITY THERE WHICH MAKES THE SAME PRODUCT AS THE PLANT IN BHOPAL. THE RESULTS OF THAT HEARING -- WHICH ARE STILL UNFOLDING -- HAVE DEEPENED OUR CONCERN THAT ANY NUMBER OF AMERICAN COMMUNITIES COULD EXPERIENCE A COMPARABLE DISASTER

UNLESS IMMEDIATE ACTIONS ARE TAKEN AT THE FEDERAL AND STATE LEVELS TO ENFORCE AND IMPROVE THE PROGRAMS IN PLACE TO PREVENT AND RESPOND TO SUCH EMERGENCIES.

THE HEARING AND OUR SUBSEQUENT INVESTIGATION HAVE REVEALED, FOR EXAMPLE, THAT UNION CARBIDE SAFETY AUDITS OF THE INSTITUTE FACILITY CONDUCTED SHORTLY BEFORE THE BHOPAL DISASTER FOUND PROBLEMS WITH THE MACHINERY THERE VERY SIMILAR TO THOSE WHICH LED TO THE TRAGEDY IN INDIA. THE COMPANY HAS ASSURED US THAT IT TOOK IMMEDIATE STEPS TO RECTIFY THESE PROBLEMS, BUT WE HAVE YET TO OBTAIN CONFIRMATION OF ITS ASSURANCES FROM EITHER FEDERAL OR STATE AGENCIES SENT IN TO AUDIT THE SAFETY OF THE INSTITUTE PLANT.

TESTIMONY AT OUR INSTITUTE HEARING ALSO REVEALED THAT THERE IS NO COHERENT EVACUATION PLAN FOR THAT COMMUNITY WHICH HAS BEEN EFFECTIVELY COMMUNICATED TO LOCAL RESIDENTS, POLICE OR FIREFIGHTERS.

APART FROM THE CHILLING POSSIBILITY OF A SUDDEN EXPLOSION AND RELEASE OF LARGE QUANTITIES OF DEADLY GASES FROM FACILITIES LIKE THE ONE IN INSTITUTE, WE HAVE RECEIVED CORPORATE RECORDS FROM UNION CARBIDE INDICATING THAT ON AN AVERAGE DAY SOME TWELVE POUNDS OF DEADLY METHYL ISOCYANATE (THE SUBSTANCE WHICH KILLED 2,500 PEOPLE IN BHOPAL) ARE RELEASED INTO THE AIR EACH HOUR. THESE ROUTINE EMISSIONS REMAIN UNCONTOLLED TO THIS DAY. AND IT IS ONLY THE TIP OF THE ICEBERG. HUNDREDS OF OTHER CHEMICALS ARE RELEASED REGULARLY INTO THE AIR.

FINALLY, OUR INVESTIGATION UNCOVERED AN INTERNAL REPORT PREPARED BY THE COMPANY CONCERNING AN ACCIDENT INVOLVING THE RELEASE OF SOME FIVE TONS OF HIGHLY DANGEROUS PHOSGENE (OR, AS IT IS COMMONLY KNOWN, MUSTARD GAS) INTO THE AIR IN AUGUST 1980. THIS INCIDENT APPARENTLY WAS NEVER REPORTED TO EITHER STATE OR FEDERAL OFFICIALS.

WHAT THE FINDINGS OF OUR INSTITUTE INVESTIGATION REVEAL, THEN, IS THAT NEW JERSEY'S PROBLEMS WITH CHEMICAL SAFETY ARE NOT ISOLATED, BUT RATHER EXIST ON A NATIONAL LEVEL. NOT ONLY ARE WE SHOCKINGLY UNPREPARED TO PREVENT OR RESPOND TO ACCIDENTS OF THE MAGNITUDE OF BHOPAL, WE ARE APPARENTLY UNABLE TO CONTROL THE CONSISTENT, DAILY VENTING OF TOXICS INTO THE AIR, THE SOIL OR THE GROUNDWATER.

HOW HAVE WE REACHED THIS DISTURBING AND TOTALLY UNACCEPTABLE STATE OF AFFAIRS AND WHAT MUST WE DO TO RESPOND TO IT?

THE ANSWERS TO THESE CRUCIAL QUESTIONS INVOLVE A COMBINATION OF FAILED GOVERNMENT AND INADEQUATE LAWS. AT BOTH THE FEDERAL AND STATE LEVEL, WE HAVE EXPERIENCED IN RECENT YEARS A VIRTUAL PARALYSIS IN THE WILL TO REGULATE TOXIC THREATS TO OUR HEALTH AND THE ENVIRONMENT.

IN 1970, FOR EXAMPLE, CONGRESS ENACTED THE HAZARDOUS AIR

POLLUTANT SECTION OF THE CLEAN AIR ACT WHICH GIVES THE ENVIRONMENTAL PROTECTION AGENCY (EPA) THE AUTHORITY TO LIST AND SET EMISSIONS STANDARDS FOR THE TYPES OF HAZARDOUS SUBSTANCES THAT HAVE BEEN INVOLVED IN THE INCIDENTS IN LINDEN, MIDDLESEX, INSTITUTE AND BHOPAL. FIFTEEN YEARS LATER, THE AGENCY HAS ONLY MANAGED TO LIST SEVEN SUBSTANCES, AND ITS ONLY RECENT ACTION IN THE AREA WAS TO ANNOUNCE A DECISION NOT TO LIST TOLUENE, ONE OF THE SUBSTANCES RELEASED IN THE MIDDLESEX FIRE.

IN THE FACE OF REGULATORY PARALYSIS AT THE FEDERAL LEVEL, THE STATES HAVE BEEN SLOW TO MOVE IN THIS VITAL AREA. NEW JERSEY HAS MANAGED TO LIST AND SET EMISSIONS STANDARDS FOR SOME ELEVEN TOXIC AIR POLLUTANTS, BUT IS NOT AGGRESSIVELY PURSUING A PROGRAM TO EXPAND THE SCOPE OF THESE REQUIREMENTS.

UNTIL RECENTLY, THE FEDERAL GOVERNMENT ALSO HAD NOT ACTED TO REGULATE THE SAFETY OF THE UNDERGROUND CHEMICAL STORAGE TANKS WHICH HAVE BEEN THE SOURCES OF MANY OF THE RELEASES INVOLVED IN

RECENT INCIDENTS. THIS FALL, HOWEVER, THE CONGRESS ADOPTED AND THE PRESIDENT SIGNED LEGISLATION ESTABLISHING A COMPREHENSIVE REGULATORY PROGRAM FOR SUCH TANKS. I HOPE TO WORK CLOSELY WITH THIS COMMITTEE TO MAKE SURE THIS PROGRAM IS IMPLEMENTED EFFECTIVELY BY THE AGENCY.

AS FOR THE OVERALL ENVIRONMENTAL SAFETY OF CHEMICAL MANUFACTURING PROCESSES NATIONWIDE, WE FIND OURSELVES IN THE MIDST OF A SENSELESS TURF BATTLE BETWEEN EPA AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), WITH EACH AGENCY POINTING TO THE OTHER AS THE ONE ULTIMATELY RESPONSIBLE FOR SUCH ISSUES. IN FACT, CONGRESS DECIDED IN 1976 THAT THE AGENCIES SHOULD WORK JOINTLY ON THESE PROBLEMS, WHEN IT PASSED THE TOXIC SUBSTANCES CONTROL ACT (TSCA) GIVING EPA THE MANDATE TO MONITOR AND REGULATE CHEMICAL MANUFACTURING PROCESSES WHICH HAVE THE POTENTIAL TO CAUSE SUBSTANTIAL RELEASES OF TOXICS INTO THE ENVIRONMENT. EPA'S FOCUS ON ENVIRONMENTAL PROTECTION -- AND ULTIMATELY ON THE PROTECTION OF THE COMMUNITIES SURROUNDING SUCH

FACILITIES -- WAS INTENDED TO SUPPLEMENT OSHA'S FOCUS ON WORKER SAFETY. THE WISDOM OF THIS DUAL ROLE IS EMPHASIZED BY THE BHOPAL TRAGEDY, WHERE NO WORKERS BUT SOME 2,500 COMMUNITY RESIDENTS WERE KILLED.

FINALLY, IN THE AREA OF EMERGENCY RESPONSE AND EVACUATION PLANS, THE PRIMARY FEDERAL ANSWER TO SUCH CONCERNS IS THE SUPERFUND PROGRAM, WHICH PROVIDES REGIONAL EMERGENCY RESPONSE TEAMS TO ASSIST LOCAL AUTHORITIES FORCED TO COPE WITH SUCH DISASTERS. FUNDS BUDGETED FOR THESE ACTIVITIES IN 1985 TOTALLED $3.5 MILLION, WITH THE RESULT THAT THE TEAMS ARE SPREAD SO THIN THAT THEY MAY BE AS FAR AS TWO HOURS TRAVEL TIME FROM POTENTIAL EMERGENCIES.

THE SUPERFUND IS UP FOR RENEWAL THIS YEAR AND, AS THE COMMITTEE IS WELL AWARE, THE ADMINISTRATION IS EXPECTED TO PRESS FOR FUNDING LEVELS SIGNIFICANTLY LOWER THAN THE LEVELS APPROVED OVERWHELMINGLY LAST YEAR BY THIS COMMITTEE AND THE HOUSE OF

REPRESENTATIVES.

CONFRONTED WITH THIS DISMAL LANDSCAPE, CONGRESSMAN WAXMAN AND I HAVE INITIATED A TWO-PRONGED EFFORT TO RESPOND TO THE URGENT PROBLEMS THAT HAVE BEEN SO CLEARLY DOCUMENTED BY THE INCIDENTS AT LINDEN.

FIRST, WE HAVE INITIATED A COMPREHENSIVE, NATIONAL INVESTIGATION OF THE SCOPE AND NATURE OF THE DELIBERATE VENTING OF TOXIC CHEMICALS INTO THE ENVIRONMENT. AS PART OF THIS INVESTIGATION, CONGRESSMAN WAXMAN HAS MAILED LETTERS TO EVERY MAJOR CHEMICAL COMPANY IN THE UNITED STATES, REQUESTING EMISSIONS DATA ON SUCH CHEMICALS AS METHYL ISOCYANATE, PHOSGENE, PCB'S AND ASBESTOS FROM THEIR LARGEST MANUFACTURING FACILITIES. WE EXPECT THIS INFORMATION TO GIVE US A PICTURE OF HOW WIDESPREAD THE HAZARDOUS AIR POLLUTANT PROBLEM HAS BECOME.

THE SECOND COMPONENT OF OUR EFFORTS IS OUR RECENT

INTRODUCTION OF A COMPREHENSIVE LEGISLATIVE PACKAGE DESIGNED TO PREVENT CHEMICAL ACCIDENTS AND TO REDRESS THE INJURIES CAUSED WHEN SUCH TRAGEDIES UNAVOIDABLY OCCUR. THE LEGISLATION CONTAINS THE FOLLOWING BASIC COMPONENTS:

* THE FIRST COMPREHENSIVE NATIONAL COMMUNITY RIGHT TO KNOW LEGISLATION WHICH INCLUDES BOTH NOTIFICATION REQUIREMENTS DESIGNED TO FULLY INFORM COMMUNITIES ABOUT THE POTENTIAL CHEMICAL HAZARDS IN THEIR MIDST AND THE MANDATORY DEVELOPMENT OF EMERGENCY RESPONSE AND EVACUATION PLANS. A KEY PROVISION OF THESE REQUIREMENTS IS THE MANDATORY FILING OF YEARLY EMISSIONS REPORTS ON SOME 2,300 TOXIC AND HAZARDOUS CHEMICALS;

* THE LEGISLATION ALSO CONTAINS REFORMS DESIGNED TO PLUG LOOPHOLES IN THE MAJOR ENVIRONMENTAL PROGRAMS WHICH SHOULD PREVENT SUCH DISASTERS, INCLUDING THE REGULATION OF LEAKING UNDERGROUND STORAGE TANKS AND THE SPECIFIC

MANUFACTURING PROCESSES WHICH LED TO SOME OF THE WORST RECENT INCIDENTS;

* THE LEGISLATION CONTAINS PROVISIONS DESIGNED TO BREATHE LIFE INTO THE HAZARDOUS AIR POLLUTANT REQUIREMENTS OF THE CLEAN AIR ACT BY MANDATING THE LISTING OF THE MOST DANGEROUS AND TOXIC SUBSTANCES NOW KNOWN;

* IT INCLUDES A PROVISION DESIGNED TO PROTECT WORKERS EXPOSED TO HAZARDOUS SUBSTANCES IN THE FACTORY BY ENSURING THAT WEAK OSHA RIGHT TO KNOW REQUIREMENTS BECOME THE FLOOR AND NOT THE CEILING FOR STATE EFFORTS TO SAFEGUARD WORKER HEALTH;

* THE LEGISLATION WOULD ESTABLISH A REGIONAL TRAINING PROGRAM FOR FIREFIGHTERS AND POLICE WHO DEAL WITH TRAIN AND TRUCK WRECKS WHICH CAUSE DANGEROUS CHEMICAL SPILLS; AND

* THE LEGISLATION WOULD CREATE A FEDERAL RIGHT TO SUE FOR VICTIMS OF CHEMICAL DISASTERS CONTAINING STRONG LIABILITY PROVISIONS AND FAIR PROCEDURAL RULES.

AS YOU CAN SEE, THE LEGISLATION CONGRESSMAN WAXMAN AND I HAVE INTRODUCED IS DESIGNED BOTH TO REVIVE FAILED REGULATORY PROGRAMS AND TO CREATE IMPORTANT NEW INCENTIVES FOR INDUSTRY -- AND GOVERNMENT -- TO PREVENT ANY MORE INCIDENTS IN LINDENS ACROSS THE NATION. I LOOK FORWARD TO WORKING CLOSELY WITH THIS COMMITTEE AS WE PURSUE THESE URGENT ISSUES IN THE MONTHS AHEAD.

THANK YOU.

STATEMENT OF HON. GEORGE HUDAK, MAYOR, CITY OF LINDEN

As Mayor of the City of Linden, I am truly concerned for the safety of our citizens. I have confidence in the ability of our emergency agencies to plan and respond. The past performance of our emergency planning and response has been positive. It will continue to be so.

Emergency planning and response to hazardous situations, natural or man made, which threatens the public health has been a continuing function of the Office of Emergency Management of the City of Linden.

Over the past three years, plans which deal with the serious curtailment of the water supply, evacuation procedures for convalescent home patients and crisis relocation have been developed. The Communities Emergency Operating Plan, including all the required departmental operating annexes were revised this past fall. Another major project was the completion of a hazard analysis report which identified high risk hazard potential in the City of Linden. The analysis was used to structure a hazardous materials incident committee chaired by John Borden, Coordinator, Office of Emergency Management, which has met regularly since mid-December to formulate plans which will expand the focus on hazardous materials incidents. The plan as it is developing is concerned:

. reporting of an incident
. responding to an incident
. public warning and evacuation

The planning is bringing together previous experiences and planning with the most recent incidents of chemical spills. Previous planning defined three levels of emergencies, they are:

Level One - no movement of population - a health alert with "alert" instructions through police public address mobile units

Level two - evacuation of a specific area. Again, police units are involved with additional isolated siren blasts.

Level three-total evacuation with sirens the warning mode.

A Level One response has been initiated twice over the past three years.

Cooperation with the county emergency management officials is significant in our planning. Our local emergency management officials are in active participation with the county staff. Reporting procedures have been strengthened between the two agencies. Evacuation routes and registration points are under review for inclusion. A speedy utilization of county resources is being coordinated with the county emergency management officials.

The Linden Fire Department is a fully paid Fire Department consisting of 132 men. The Fire Department has been designated as the lead local agency in handling a hazardous materials incident by the local Emergency Management Coordinator, Mr. John Borden.

The Fire Department Incident Coordinator has been designated as the responsible person to make the initial size-up upon arrival at the scene. He makes a determination as to the type of hazardous materials incident that is involved; such as a vapor cloud or atmospheric discharge or a liquid spill. He then notifies the Fire Department Alarm Bureau to notify the proper agencies such as the Emergency Management Coordinator, Middlesex County Health Department - Air Pollution Control Program (which the City of Linden has contracted to be the local State of New Jersey, Department of Environmental Protection representative), the State Police, and other agencies as necessary. At this point he directs the Fire Department personnel in the strategic set-up and proper fire suppression techniques to protect lives and minimize the hazard.

During a hazardous materials incident the Fire Department operates according to a Standard Operating Procedure which they have been trained with. This procedure instructs them in, but is not limited to, the proper protective gear such as turnout clothing, boots, helmets, self-contained breathing apparatus, etc., the appropriate procedure for the specific type of hazardous materials incident which has occurred, and decontamination procedures.

Once the Emergency Management Coordinator or the proper State authorities arrive at the scene, the Incident Commander updates them and turns control of the scene over to them. The Fire Department Incident Commander then acts upon the advice and at the direction of the appropriate State authority.

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DIRECTOR

RICHARD J. HILLS
PROGRAM COORDINATOR

CHRONOLOGY OF INDUSTRIAL RELEASES FROM OCTOBER 6,1984 TO JANUARY 21,1985

10/6/84 — American Cyanamid, Linden - release of crude malathion from storage tank. Reported to State/Local officials. Estimated 101 persons treated at area hospitals. Odor extended over 20 miles from emission point.

10/29/84 — Exxon Refinery, Linden - release of hydrocarbons and hydrogen sulfide from malfunctioning flare. Waste streams being received from Exxon West Side Chemical Plant process. Not reported by company, as they were unaware of emission until we investigated what turned out to be 111 citizen complaints. No persons reported hospitalized. Odor extended over 20 miles from emission point.

10/30/84 — Exxon Refinery, Linden - release of hydrogen sulfide, sulfides, mercaptans, hydrocarbons and related petrochemical air pollutants from Refinery processes, including, but not limited to, the ABW Flare, Waste Water Treatment Facility, Desulfurizer and related equipment. Exxon unaware of fugitive emissions until we investigated what turned out to be 15 citizen complaints - no persons reported hospitalized. Odor extended Westward across Linden, into adjoining Union County communities.

11/9/84 — E.I. DuPont, Linden - release of approximately 10 gallons of Oleum, as a result of a disconnected valve flange on an SO_3 transfer line. Local fire department made notification to us. Vapor cloud impacted nearby industries - no injuries reported. Vapor cloud dissipated upon leak being stopped.

11/16/84 — Union Carbide (Keasbey), Woodbridge - release of 500-600 pounds of anhydrous hydrogen chloride from tube trailer, as the result of an in-plant accident. At least three persons at a nearby company were affected by plume - they were not hospitalized. County Emergency Management officer made report to us.

11/27/84 — E.I. DuPont, Linden - release of approximately 3 gallons of 65% Oleum, as a result of a mechanical pump seal failure at the 40% Oleum operation area (1015 hours). No company notification made. Approximately 40 persons working at Goethals Bridge overcome by vapor cloud. Vapor cloud dissipated upon adequate ventilation/dispersion in atmosphere. Source not uncovered until 1400 hours, after door-to-door investigation by M.C.A.P.

11/29/84 Merck & Co., Rahway/Linden - release of approximately 25 gallons of monochloroacetone from MCA Distillation Column. Release resulted in complaints from Linden Police and nearby warehouse employees. Complainants experienced burning and tearing of eyes, as MCA is a lacrimator. Leak not reported by Merck; occurrence uncovered by follow-up investigation next day by this office.

12/1/84 Ritter Transportation, Inc., Rahway - release of butane and associated methyl mercaptan from tank truck. Four persons treated at area hospital and released. Leak not reported by company. Clean-up contractor brought to site to remove material "frozen" on the ground.

12/2/84 Exxon Company (Refinery), Linden - release of approximately 200 tons of catalyst (aluminum silica) from cat cracker catalyst recirculation system. Release attributed to power dip from P.S.E. & G., causing Refinery processes to go off line. Pressure release valve at catalyst recirculation system blew and catalyst was emitted for approximately 30 minutes. Reports of dust from 10-15 miles Northwest of facility received next day (daylight hours). Company reported incident to this office shortly after inception of incident.

12/3/84 Nuodex, Borg Warner, Inc., Woodbridge - release of approximately 10 lbs of phosphorus oxychloride from storage tank/ transfer operation which resulted in evacuation of Nuodex and adjoining company (Sherwin Williams) employees. Company did not think emission left plant, and therefore, was not reported. Anonymous call to this office prompted follow-up investigation.

12/11/84 Ethyl (Saytech) Corporation, Sayreville - release of approximately 5 gallons of Bromine to caustic scrubber, which couldn't neutralize surge fast enough. Overloaded scrubber plume discharged to outside air. Condition controlled within 5 minutes by adding caustic to scrubber. Reported to State and local authorities. No reports of injury, no complaints received

12/19/84 Ethyl (Saytech) Corporation, Sayreville - release of undetermined amount of Bromine from overpressurized delivery vessel into caustic scrubber which couldn't neutralize volume fast enough. Overloaded scrubber suspected to have released vapor cloud, including approximately 1 pound of liquid Bromine. No report made by company to any authority. This Program received complaint of "orange smoke" from passing motorist. No report of injury.

1/4/85 American Cyanamid, Linden - release of 1150 gallons of Dimethyl Phosphorochloridothionate - approximately 50 gallons of which was in fugitive vapor form - from a 1500 gallon process storage tank. Reported to State and local officials. Areas of major impact were South/Southwest; Carteret, Staten Island, Monmouth County - Bayshore Area. 1 person reported to have sought hospital treatment for nausea.

1/14/85 American Cyanamid, Linden - release of approximately 10 gallons of 35% Oleum, as the result of a leaking elbow and related equipment at the Sulfur Acid Plant. Release resulted in vapor cloud and some liquid to ground. Steps taken immediately to abate leak and neutralize spill. Reports made by company to State and local authorities. No reports of injury.

1/21/85 American Cyanamid, Linden - release of approximately 560 gallons of insecticide O,O,-Dimethyl-S-(N-Methylcarbamoyl-methyl) Phosphorodithioate-Company name "Cygon 400". Release resulted from suspected failure of temperature controller on Tank 170-3 at Building #69. Material classified as Organo Phosphate. Vapor cloud resulted in complaints from as far away as Nassau County. State and local authorities notified. Reports of foul odor, no reported injuries outside plant. Several company workers impacted by release tended to by plant medical personnel.

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RICHARD J. HILLS
PROGRAM COORDINATOR

HAZARDOUS SUBSTANCES/EMERGENCY RESPONSE PROGRAM

NAME(S) AND DUTY STATUS: I.E. ON CALL 24 HRS, WORK DAYS ONLY

Richard Hills	Program Coordinator
Richard Kozub	Supervisor, Emergency Response Unit

PHONE NUMBER(S) DAY: (201) 826-3100
24HRS: (201) 826-3100

DESCRIPTION OF RESPONSIBILITIES IN EMERGENCY RESPONSE TO HAZARDOUS MATERIALS INCIDENTS: The County Haz-Mat ER Program is responsible to provide emergency assistance at the site of any fire, explosion or other incident which involves toxic or hazardous materials. The Unit investigates all reports of spills and other releases into the environment of oil, petroleum products and other hazardous materials from any source or cause, including pipeline or tank ruptures, train derailments, highway accidents, deliberate illegal dumping of waste (whether free-flowing or drummed), and releases from industrial sites.

The Program is designed to respond to the scene of a release; assess the impact of the release, including collection of all pertinent facts; advise those responsible officials at the scene of the actual or potential impact of the release upon the environment. Coordination of site environmental activities related to air emissions, as well as sampling for concentrations of air emissions are a primary function of the Response Unit. As certified agents of the N.J.D.E.P., we act as on scene coordinator until their arrival, and as designated agents, assisting at the scene of the incident, if and when the D.E.P. responds to the site.

RESOURCES AVAILABLE: (IN GENERAL TERMS) Emergency Response Van equipped with protective personal gear, sampling equipment, communications equipment, miscellaneous turnout gear, including gloves, boots, tyvek suits, etc.

NOTE: This Program provides services to all of Middlesex County and Linden and Rahway in Union County via an Interlocal Services Contract. Area consists of a total of 333 square miles populated by 670,000 people

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LASZLO SZABO, MPH, MPA
DIRECTOR

ANNOUNCEMENT

Please be advised that on October 29, 1984, at 2:00 P.M., at the Middlesex County Annex, Georges Road, North Brunswick, officials of Middlesex County and the New Jersey Department of Environmental Protection will meet and formally execute the first Interagency Agreement covering a County Hazardous Substances/Emergency Response Program.

The Interagency Agreement, to be signed by George J. Tyler, Assistant Commissioner, Environmental Management and Control, N.J. Department of Environmental Protection, and Stephen J. Capestro, Chairman, Department of Health and Social Services, County of Middlesex, is the last of 5 such agreements to be executed for Middlesex County under the mandates of Public Law 443 - The County Environmental Health Act, (N.J.S.A. 26:3A2-21), and Chapter 1H - County Environmental Health Standards of Administrative Procedure and Performance, (N.J.A.C. 7:1H-33). The Act provides that Counties shall prepare and submit for the New Jersey Department of Environmental Protection (N.J.D.E.P.) approval, work plans designed for the control of air, solid waste, noise, and water pollution, as well as a hazardous substance control program. Said Programs are thus to be an integral portion of the Middlesex County Health Department (M.C.H.D.).

Middlesex was the first County in New Jersey to enter into inter-agency agreements (contracts with the N.J. Department of Environmental Protection) for air pollution, noise [illegible] solid waste control programs in June of 1983. The water control program agreement was executed in February of 1984. Thus, the signing of this final agreement fulfills the mandates of the County Environmental Health Act, approved and passed by the Legislature in 1977, and signed into law in 1978, by Governor Brendon Byrne.

The Middlesex County Hazardous Substances/Emergency Response Program, to be known as the HAZ-MAT Program, shall exist for the following purposes:

1. To integrate the activities of the DEP and the MCHD, consistent with the findings and purposes of the County Environmental Health Act, County Environmental Health Standards of Administrative Procedure and Performance;

2. To ensure the maximum effective use of manpower and resources by the delegation of appropriate Haz-Mat responsibilities to the MCHD, acting as authorized agents for the DEP;

3. To continue the existing MCHD Haz-Mat Program directed to the protection of public health;

4. To maintain public support of the MCHD Haz-Mat Program through response to environmental emergencies and satisfactory advisement to, and consultation with, impacted citizens, and local officials;

5. To provide for effective communication and exchange of information between agencies.

INTERAGENCY AGREEMENT

MIDDLESEX COUNTY

HAZARDOUS SUBSTANCES/EMERGENCY RESPONSE PROGRAM

MIDDLESEX COUNTY HEALTH DEPARTMENT
AIR POLLUTION CONTROL PROGRAM
280 HOBART STREET, ROOM 518
PERTH AMBOY, N.J. 08861
(201)-826-3100

INTERAGENCY AGREEMENT

HAZARDOUS SUBSTANCES/EMERGENCY RESPONSE PROGRAM

FORWARD

The following is the Hazardous Substances/Emergency Response agreement reached between the undersigned County of Middlesex, Department of Health (hereinafter CMDH) and the New Jersey Department of Environmental Protection (hereinafter DEP). For the purposes of this agreement, Hazardous Substances/Hazardous Materials (hereinafter Haz-Mat) shall be used synonymously.

The purposes of this agreement are:

1. To integrate the activities of the DEP and the CMDH consistent with the findings and purposes of the County Environmental Health Act, County Environmental Health Standards of Administrative Procedure and Performance;
2. To ensure the maximum effective use of manpower and resources by the delegation of appropriate Haz-Mat responsibilities to the CMDH, acting as authorized agents for the DEP;
3. To continue the existing CMDH Haz-Mat Program directed to the protection of public health;
4. To maintain public support of the CMDH Haz-Mat Program through response to environmental emergencies and satisfactory advisement to, and consultation with, impacted citizens, and local officials;
5. To provide for effective communication and exchange of information between agencies.

45-728 O - 85 - 5

A. GENERAL TERMS AND PROVISIONS

1. All correspondence, communications, reports prepared, and samples taken by the CMDH under terms of this agreement, will be forwarded to the DEP through its Field Offices.

2. State forms and sample containers required by the CMDH under terms of this agreement will be supplied by the DEP.

3. The DEP will provide the CMDH with copies of correspondence, legal actions, and other pertinent data, relevant to those environmental emergencies occurring within the jurisdiction of the CMDH.

4. The DEP will notify the CMDH of conferences and hearings relevant to those environmental emergencies which occur within the area under the jurisdiction of the CMDH, and the CMDH may participate in such conferences and hearings, provided such participation is within the limits of the DEP's legal authority and administrative policies and procedures.

5. The DEP will notify the CMDH of all reported incidents relevant to the area under the jurisdiction of the CMDH.

6. The CMDH actions taken under the terms of this agreement will be limited to the geographic area under its jurisdiction, unless otherwise requested or directed by the DEP, or operating in an adjoining jurisdiction under a joint mutual-aid agreement.

A. GENERAL TERMS AND PROVISIONS (Cont'd.)

7. DEP's policy regarding reports, legal actions, correspondence and their confidentiality shall apply to the CMDH.

8. When good and sufficient cause exists, the DEP may exercise its discretion in deviating from the terms of this agreement with prior notice to the CMDH, but without prejudice to the CMDH's right to appeal such deviation.

B. TERMS OF AGREEMENT

1. The CMDH will respond to, and provide emergency assistance at the site of any fire, explosion or other incident which involves toxic or hazardous materials. The CMDH will immediately report to the DEP, in a manner prescribed by the DEP, all such incidents, along with an account of actions already taken.

2. N.J.A.C. 7:1H-3.3(b)

a. The CMDH will investigate all reports of spills and other releases into the environment of oil, petroleum products and other hazardous materials from any source or cause, including pipeline or tank ruptures, train derailments, highway accidents, deliberate illegal dumping of waste (whether free-flowing or drummed), and releases from industrial sites.

b. Primary responsibility for landfills and abandoned dump site emergencies rests with CMDH - Solid Waste Program. The CMDH Haz-Mat Program will provide support service, upon request.

B. TERMS OF AGREEMENT (Cont'd.)

3. N.J.A.C. 7:1H-3.3(c)

In cooperation with the DEP, the CMDH will participate in the removal of certain designated hazardous materials which have been released, and in the taking of measures to prevent damage to public health, safety, welfare, or the environment resulting from spills, and receive reimbursement for such activity where authorized under the Spill Compensation and Control Act. N.J.S.A. 58:10-23.11 et seq.,

The CMDH will act as on-scene coordinator, unless the DEP indicates it will perform that function. When authorized by the DEP to act as on-scene coordinator, the CMDH will take charge of site environmental activities, and report on the measures to the DEP. When the DEP acts as on-scene coordinator, the CMDH will give assistance to the DEP.

4. N.J.A.C. 7:1H-3.3(d)

The CMDH will investigate discharge incidents in order to determine: the quantity of material released into the environment; the probable impact on public health and the natural resources; the causes, persons responsible, and any other information needed to establish the seriousness of the incident; the remedial measures needed; and the identities of persons who may be liable for costs and damages.

B. TERMS OF AGREEMENT (Cont'd.)

4. N.J.A.C. 7:1H-3.3(d) (Cont'd.)

The CMDH will make available to the DEP, and the Administrator of the New Jersey Spill Compensation Fund, all information and evidence obtained from such investigations. In the event the State brings legal action, investigators and their evidence shall be available to appear in court and pretrial proceedings. All such information shall also be made available to the County Prosecutor's Office.

5. N.J.A.C. 7:1H-3.3(e)

The CMDH will bring legal action against persons responsible for causing spills, by exercising the power to enforce environmental laws, as provided in the Environmental Rights Acts, N.J.S.A. 2A:35A-1 et. seq.

6. N.J.A.C. 7:1H-3.3(f)

The CMDH shall make claims for reimbursement of expenses incurred for activities related to the removal of spills of hazardous materials, or the prevention or mitigation of damages arising from such spills, as authorized by the DEP, to the Administrator of the New Jersey Spill Compensation Fund through the DEP.

7. Reports

The CMDH and the DEP shall keep each other informed of all details pertaining to the emergency situation. Upon resolution of the problem, the CMDH shall submit to the DEP a written report indicating its activities during the emergency situation.

B. TERMS OF AGREEMENT (Cont'd.)

8. Action Line

The CMDH will be contacted by the DEP Action Line (Hot Line) during holidays, weekends and evening hours in cases of emergencies. If, as a result of any call, the CMDH feels it requires assistance from the DEP, the DEP Action Line operator will be so advised, and will in turn initiate the required course of action/contact.

9. Qualifications

The CMDH will submit to the DEP annually, a listing of all emergency response personnel, along with their training and qualifications. The CMDH shall also include a listing of all equipment available for emergency response operations.

10. Training

Within the limitations of available resources, the DEP will assist the CMDH in the training of personnel. The DEP will provide special reports and other information that becomes available from time to time.

11. Equipment

Within the limitations of available resources, the DEP will assist the CMDH in the acquisition of emergency response equipment.

12. Meetings

The DEP will meet with the CMDH periodically, at a mutually agreed upon time and place. Additional meetings may be scheduled, as needed, by mutual consent.

B. TERMS OF AGREEMENT (Cont'd.)

13. Public Participation

a. In keeping with the NJDEP's proposed public participation policy, the CMDH shall conduct public participation activities in all stages of its planning, decision making and implementation processes. The CMDH shall ensure the involvement, where appropriate, of elected officials, industry, public interest groups, organizations, response agencies, etc.

b. The DEP will assist the CMDH in providing training of responders in hazardous materials incident response.

14. Statistical Reports

a. The CMDH will file with the DEP statistical reports in the format, and at time intervals specified by DEP.

b. The CMDH will furnish the DEP with special reports and other information, as may be required from time to time.

15. Work Plan

The CMDH shall submit to the DEP, a County Haz-Mat Implementation Plan which will include a description of the nature and scope of the existing program, the future goals and objections of the program, the personnel and resources required to meet the program's future goals and objectives, and the delineation of responsibilities.

Note: All persons responding to emergencies, potential or actual, should take necessary precaution and use good judgement to avoid personal injury.

B. TERMS OF AGREEMENT (Cont'd.)

16. Terms of this Interagency Agreement shall be subject to review at least once a year.

BY: George J. Tyler
George J. Tyler
Assistant Commissioner
Environmental Management and Control
N.J. Department of Environmental Protection

DATE: 10/27/14

BY:
Stephen J. Capestro
Chairman
Department of Health and Social Services
County of Middlesex

DATE: 10/24/14

STATEMENT OF ROBERT PYLE, VICE PRESIDENT

UNION CARBIDE CORPORATION

Before

The Committee on Environment and Public Works

United States Senate

Newark, New Jersey

February 18, 1985

Mr. Chairman, Members of the Committee, I am Robert E. Pyle, Vice President of Union Carbide Corporation, my job responsibilities encompass several corporate functions, including general supervision of Union Carbide's Corporate Health, Safety and Environmental Affairs activities. With me today are Mr. Jackson B. Browning - Vice President, Health Safety and Environmental Affairs and Engle D. Southard, Health Safety and Environment Manager of our Speciality Chemicals Division. Mr. Southard is located at our Bound Brook, New Jersey facility.

We are committed to sharing the lessons learned from the Bhopal incident with government and industry. I am here today as part of that process, and look forward to sharing some of our ideas and concepts.

We are convinced that the chemical industry must continue its excellent safety performance. We also must work together - government and industry - to regain the public's confidence that the chemical industry operates safe plants and that those public authorities responsible for protecting public safety and the environment have the authority and the resources necessary to meet the public interest. Toward this end, I would like to discuss with you community right-to-know, emergency response preparedness, and our approach to safety management.

First let me offer some general observations. We recognize that public health and safety officials, and many others in the community, need to know more about the potential danger associated with those hazardous materials manufactured or handled in their communities. We believe that effective emergency preparedness and response capability at the local level is vital. Many ideas have been put forward to deal with the community right-to-know and the emergency response preparedness issues. At Union Carbide we have identified five principles which we have applied in our analysis of these ideas.

We believe that sound policy improvements should:

1. Improve the public's confidence in the chemical industry's safety;
2. Improve the public's confidence in the regulatory authorities ability to protect their interest;
3. Facilitate the most efficient way to achieve the specific results;
4. Be compatible with existing rules and regulations, and
5. Be capable of pragmatic application by both government authorities and industry.

Application of these concepts to our thinking on the subject of "Community-Right-to-Know," and "Emergency Response" has lead us to some basic conclusions.

HAZARD COMMUNICATION MUST BE EFFECTIVE

We believe, the emphasis must be on communicating hazard information. We believe it is in the interest of society, industry, and of Union Carbide that a consistent nationwide system of hazard communications exist. Such a system should ensure that employees, public authorities, and the community are provided sufficient information to promote safe operation, emergency

response, and community knowledge and understanding.

It is our belief that the Federal OSHA Hazard Communication Standard provides a solid formula for communicating hazards, precautions, and emergency response procedures to employees. Its many provisions, including workplace chemical lists, material safety data sheets, observations for self protection and safe operating practices are the same elements that a community should know, and therefore, are a good basis for effective community hazard communication.

The material safety data sheets required by OSHA's Hazard Communication Standard provide a solid basis for communicating to all segments of the community. This includes residents of plant communities, elected officials, state and local agencies, physicians, other health professionals, community organizations and the media. This broad definition of community, we believe, includes all segments that may benefit from information concerning the particular chemicals and their potential dangers which are handled in their community.

As I've said, community right-to-know programs must focus on effective communication. Merely making information available to everyone who requests it may result in poor communication raising needless apprehension, misinterpretation, and unfounded public fear. One type of organization that in our experience has been very useful in promoting effective communication is what has been termed here in New Jersey as "Hazardous Material Advisory Councils. I'll have more to say about the value and operation of these councils later, but I emphasize here our strong support for the role of such councils in the communication of hazard information.

We believe that the most effective and efficient use of available government and industry resources will require designation of one public

authority as the lead community organization to receive and coordinate the distribution of hazard information. Union Carbide feels strongly that both industry and government have a shared responsibility to ensure effective and useful hazard communications. We are continuing our work to develop programs through which industry can best contribute.

It's not a simple task! Some suggest that our plants make the information directly available to a wide variety of organizations and individuals routinely or on request. Others, including Union Carbide, are not sure that such an approach would be suitable or workable given technical nature of the information and the broad variation in size and scope of both government and non-government organizations, and of industry facilities which utilize hazardous materials.

Here in New Jersey, and elsewhere, our chemical facility managers are working with community and public authority leaders to devise effective approaches. Representatives from our Bound Brook plant participated in Senator Ray Lesniak's Friday, February 15 meeting, where he outlined his plans for the establishment of a Union County/Middlesex County Hazardous Materials Advisory Council. We look forward to learning of the results of this proactive approach to Community Right to Know.

EFFECTIVE EMERGENCY RESPONSE IS POSSIBLE

Hazard communication, of course, is the basis for effective emergency response preparedness. Our ongoing re-evaluation of emergency response planning and capability in communities where Union Carbide operates chemical facilities convinces us that improvement is possible. Indeed, much is in progress at this very moment. We are very encouraged that truly effective emergency response programs are doable. And, we are encouraged that improvements can be made without creating undue fear in the community.

TOTAL COMMUNITY INVOLVEMENT IS NEEDED

The key to success may well be the "Hazardous Material Advisory Council" (HMAC), approach, which I previously mentioned. Where effective response planning exists today such councils are always a major factor though they may be called by other titles such as Emergency Planning Boards, mutual aid systems, Emergency Operations Group, etc.

I would like to briefly discuss our ideas concerning the benefits and roles of these councils. First, we believe the HMAC's provide a very practical forum for defining and addressing community hazardous materials risks and concerns and for the exchange of hazard information. These councils suggest strategies to reduce defined risks and concerns. They also suggest ways to maximize the use of available federal, state, local and industrial resources in event of hazardous materials emergencies. Through broad participation, the councils promote greater shared awareness of problems and resources and encourage greater inter-agency, intra-jurisdictional and industry involvement and cooperation. In summary, the councils encourage and facilitate a higher level of preparedness and thereby greater public protection in general.

Councils can be established through voluntary participation, as are most present groups, or alternatively by personnel appointed appointment by elected officials, such as by a mayor or governor.

In either event, their success requires the involvement of a broad community base, willing to communicate, cooperate and compromise. Examples of involved groups include:

o Public officials from state, county and local governments,

- o Emergency services leaders; fire officials, law enforcement managers, emergency medical services, emergency planning officials, etc.
- o Industry leaders; plant managers and their staffs
- o Service groups; health departments, communication media, weather service,
- o Agencies; EPA, OSHA, DOT, FEMA.
- o Other interested parties; labor leaders, environmental organizations, etc.

Key influential and interested leaders usually establish objectives and action plans, while involving specialists and others in Task Forces to address specific concerns, such as; communication, training, medical treatment, evacuation or multi-organization drills.

Union Carbide is a participant in such Emergency Preparedness groups in West Virginia, Texas and Louisiana, as well as in the Bound Brook, New Jersey "Emergency Operation Plan Group."

THE PUBLIC POLICY ROLE

Having stated our belief that effective emergency preparedness and response programs require some organization like Hazardous Materials Advisory Councils, I now want to turn to the subject of the role of Government in emergency preparedness. Frankly, we believe it is in our best interest, as well as society's, that nationwide guidelines be developed to ensure that appropriate planning and response capability exists where needed. We feel such guidelines would also improve public confidence that such capability inadequate and that the responsibilities of industry and the community are well defined.

Developing legislation to facilitate such effective guidelines will be a challenging job and one that Union Carbide is dedicated to assisting. The tremendous complexity and variety in our nation's mix of communities and industrial facilities, however, seems to call for maximizing local implementation and flexibility while providing national performance criteria and assistance.

I can say from personal experience, that the Bhopal incident has dramatically increased the urgency and activity of the chemical industry's efforts to develop improvements in public safety provisions. For example, Union Carbide is very active in the American Institute of Chemical Engineer's priority programs to improve engineering standards and risk analysis capability. Also Union Carbide representatives are working in the Chemical Manufacturers Association's nationwide efforts to develop and implement improvements in community awareness and Emergency Response Programs. Virtually all companies within the industry support these and other programs, in addition to their own accelerated internal efforts.

As with the subject of hazards communication, Union Carbide's chemical location managers and technical specialists are now working with local leaders, agencies and community organizations to improve the effectiveness of emergency preparedness programs. We will continue to do so and plan to keep this committee and other members of Congress, as well as state and local governments advised of our progress.

Our experience suggests that no industry, organization or government agency has by itself all the knowledge or experience at this time to develop the most effective and efficient hazardous materials emergency response guidelines. Congress may want to authorize the EPA or FEMA to work with industry, and the many other parties involved to conduct several pilot

programs in the near future prior to implementation of a comprehensive national program. Union Carbide would be pleased to participate in such developmental programs. We sincerely believe that the nation will benefit if we jointly work to develop the very best public policies.

OPERATION SAFETY SUPERVISION IS EXTENSIVE

As important as emergency response preparedness and hazard communications are, the critical element is the operational safety of our facilities. It is one of our primary considerations, from the very beginning, for assessing which method and/or process is to be employed in making a product. Once a basic process is selected, safety considerations are developed and specific safety standards must be met in the engineering design of the production unit. Additional safety requirements and procedures are developed and applied at each stage of the operation and maintenance of the production unit and its associated facilities. In all considerations of safety, the properties of the particular material involved are foremost.

As a check on the effectiveness of this system, we have an ongoing system of safety reviews and audit procedures. Operational Safety Surveys, a program of self-criticism if you wish, conducted at the production unit by a team of safety professionals and technologists who normally are selected from other parts of the corporation. You have indicated an interest in this program and I will, therefore, use it as an example of Union Carbide's commitment to safety management. The OSS surveys form just one part of Union Carbide's overall risk assessment/risk management efforts. We feel that this survey program represents one of the most important facets of a very comprehensive management system.

The primary task of the Operational Safety Survey Team is to systematically review the operation and identify processing, equipment and operational hazards. During the survey, the team attempts to identify specific sections of the process or operation where further in-depth study, such as system safety analysis, would be appropriate and beneficial. Attention is directed to evaluating and classifying hazard potentials.

Operational safety surveys are conducted as part of a regular program for Union Carbide's domestic petrochemical facilities. We conduct about 15 such surveys on various petrochemical processes each year.

A typical OSS team has from three to five professionals familiar with the process or operation being studied and they have a working knowledge of the basic engineering and chemistry principles involved. The OSS team considers three categories of potential hazards: imminent, major and less serious. An imminent hazard is one whose consequences and likelihood of occurrence are of such magnitude as to require immediate correction or cessation of an operation until correction can be achieved.

A major hazard is identified as one with serious potential consequences but relatively low likelihood of occurrence or, conversely, one having a high likelihood of occurrence but having moderate potential consequences. Less serious hazards include all other process-related situations deemed important by the survey team, and which warrant management review and action.

After the survey has been completed, but prior to leaving the plant site, the OSS team meets with appropriate members of plant and departmental management to orally report its findings. Any imminent safety hazards are reported at this time for immediate consideration. This is followed by a brief description of all the major safety concerns.

The OSS team prepares a final written report within 30 days after the oral report is given. This report separates the safety concerns into two categories -- major and less serious. The summary of the report gives a synopsis of the major concerns. Details of both major and less serious concerns are presented in a discussion section. Where appropriate, supplemental documents are appended to the body of the report. In conducting these surveys, the company is dedicated to identifying and evaluating all potential hazards as a matter of good corporate business practice and loss prevention and control.

Union Carbide's operational safety surveys are designed to discover any deficiencies and to suggest additional safety improvements which may be needed in our plants. It is important to note that the safety team considers even theoretical situations which assume that several highly improbable events take place

Operation Safety Survey Reports are submitted to the Division President responsible for the unit's operation. He and his line organization are responsible for follow up actions and must issue periodic reports to corporate management until all deficiencies are resolved.

Our safety management approach gets results. In the chemical industry, which has one of the best safety performances of U.S. industry, Union Carbide has consistently been among the leaders. Last week we had a company wide safety awards and recognition program to honor our facilities around the world for their outstanding records. It was noted that invited locations represented over 250 facilities which achieved safety milestones, and included 12 of our domestic divisions and six international companies.

In summary, we strongly support both community Material Hazards Communication, and Emergency Response Preparedness while recognizing that they are very complex subjects for public policy. This complexity derives not only from their technical nature, but also from the broad mix of involved industry facilities, government and non-government organizations. Significant work is in progress on both subjects by many above organizations as well as chemical industry groups. We, therefore, urge that Congress and industry work together to incorporate the results of these efforts, and the industry's proven safety management systems into improved, consistent nationwide public policies.

I thank Senator Lautenberg for inviting us to discuss discuss and contribute to these important issues, and would now be pleased to answer any questions.

TESTIMONY OF

K. TSU
PLANT MANAGER
AMERICAN CYANAMID COMPANY
LINDEN, NEW JERSEY

Good morning, ladies and gentlemen, and thank you for this opportunity to share information of mutual interest and concern.

My name is Kin Tsu and I am the plant manager at Cyanamid's Linden, New Jersey manufacturing facility. I have with me Dr. Joseph Terenzi, director of Cyanamid's environmental, toxicology and manufacturing services group.

I am a chemical engineer having received my Ph.D. from Princeton University in 1961. Our plant in Linden, which began production in 1916, now employs about 600 people, 400 hourly and 200 salaried, and represents more than a $100 million investment for Cyanamid. The products we manufacture fall into three main groups: acrylamide-based products used primarily to treat municipal sewerage and drinking water supplies; organophosphate and other products used both as pesticides in crop protection and public health spraying and as mining chemicals to recover valuable minerals from ores; and process chemicals which, as their name implies, are used at our plant in the manufacture of end-products or at other companies to manufacture their end products. A major process chemical is sulfuric acid, which is used in water treatment and car batteries and in the production of paint and steel.

My first priority today is to apologize again for the community disruption and concern that resulted from the three accidents at our plant between October 6 and January 21. Equally important, I want to review the causes of these accidents and the steps we have taken to prevent reoccurrences.

Although the accidents involved different products and different processes, they have two causes in common. First, they were caused by pressure build-ups in tanks caused by over-heating; and second, they involved chemical reactions that may be characterized as "self-propagating."

When temperatures in these tanks rise above normal levels, chemical reactions occur. These reactions produce more heat, which in turn, accelerates even more heat-producing reactions. The key to controlling these types of reactions is to stop them as soon as possible.

To prevent a reoccurrence, we have intensified our efforts to carry out systems safety and operability analyses on our manufacturing operations and materials storage. These analyses are "fault-tree" procedures used by industry and NASA to identify potential problem situations that could lead to accidents such as an emission. The procedure includes review of any operational factor such as training, equipment, instrumentation, operating procedure, maintenance, chemical reactivity, etc. To supplement this approach to evaluating process risk, we have augmented our existing staff with additional personnel from other locations to review the adequacy of our operations and to expedite improvements. In addition, we have hired the Stone & Webster Engineering Corporation to independently review the adequacy of our processes and hazardous materials handling systems during both routine operation and emergencies.

As a result of these efforts, we have taken the following actions. We have temporarily shut down certain operations to reevaluate and ensure that the identified steps that will minimize risk have been taken. We have increased monitoring of all tank storage systems, and where indicated, additional alarms and interlocks are being installed on a priority basis. To intensify our existing training program, especially in safety procedures, we have added a full-time training director to our staff. We are re-reviewing our operating procedures to ensure that modifications are made and included in the training program. To underscore these actions, we have intensified round-the-clock management control with senior plant management visiting the plant during all shifts including nights, weekends and holidays.

With that in mind, I would like to review the safety, environmental protection and emergency response procedures that have been in place at our plant for many years. From recent events, it is clear that improvements are necessary, but the basic procedures have been in place and operating at our plant for many years.

Our safety program is designed to prevent accidents, protect health, and is based on operational practices, employee training and medical surveillance.

The human factor is essential in the safe manufacture of any product. Training begins the moment the employee begins work with an indoctrination program that includes safety standards, chemical hazard information, personal protection equipment, the

plant's fire system and departmental safety rules which are tailored to the products manufactured in that department. The new employee then enters skills training to prepare him for his specific job. This training period includes indoctrination in specific safety procedures for the job tasks he will perform and the emergency response procedures for the materials handled in the employee's department. These procedures also are written into the operating procedures for manufacturing the product. In addition, there is a monthly safety meeting in each department to discuss problems and to review procedures.

The medical surveillance program at our plant includes a physical examination for each employee at the time of hire and then every two years under age 40 and annually over the age of 40. This examination includes blood and urine analysis, hearing and vision testing, a chest X-ray, electrocardiogram, and an in-depth review of disease symptoms with the employee to determine whether there is any health problem that requires follow-up.

The other key element of the medical surveillance program is industrial hygiene, which monitors the employee's exposure to chemicals on the job. This information is communicated to the employee. This monitoring is based on Cyanamid, OSHA or ACGIH standards and measures ambient air exposure to the chemicals being handled. The standards set by Cyanamid and the American Conference of Governmental Industrial Hygienists are, in many cases, more strict than OSHA standards. We are in compliance with these standards.

As a result of this medical surveillance program, we have not identified any significant occupational disease patterns associated with the chemicals handled or manufactured at our plant.

We recognize that odors from some of these chemicals are offensive; the fact is, they can be smelled at extremely low levels -- levels which are far below those which would pose a health hazard.

Our environmental protection program is focused on both exposure and odor prevention. The plant's Environmental Services Department is responsible for ensuring that all plant operations are in compliance with federal, state and local air, water and solid waste regulations. This effort involves maintaining compliance with approximately 220 NJDEP-approved air permits. These permits specify the designated use of operating equipment, air pollution abatement equipment, frequency of use and maximum permissible emission levels. In addition, our operations are governed by active water and solid waste permits. The NJDEP conducts quarterly inspections of our site, each lasting three to four days, to verify our compliance with these air quality regulations. All plant operations are in compliance.

Our plant has spent over $14 million for environmental protection facilities and equipment, with an additional annual budget of approximately $4 million for environmentally related activities. Each of our managers and supervisors is directly responsible and accountable for assuring that their operations are in compliance with environmental regulations. Our

Environmental Services Department continually monitors and audits activities as an additional check to ensure compliance for our total operation.

I'll now turn to our emergency response program.

There are two main objectives of this program: first, to bring the emergency under control as soon as possible, and second, to notify the community about the emergency so that appropriate steps may be taken to protect the public welfare.

Bringing the emergency under control is the responsibility of the management and employees who are manufacturing the product. Other personnel, including our plant fire department, will assist them. At the same time, the Linden fire department is notified. If necessary, the Linden Industrial Mutual Aid Council is also notified. The latter organization, which has been operating for 15 years, provides personnel, equipment and other resources in an emergency. I am submitting a list of LIMAC members today, which includes 17 companies and the fire, police, civil defense and volunteer ambulance corps of the the city of Linden. Local, state and federal regulatory agencies also are notified.

The key to an effective emergency response program is local cooperation, and that has been in place for many years in Linden. But emergency response planning is an on-going program. For example, a year ago, in cooperation with the Linden Fire Department, most firemen in the city went through an indoctrination of our plant and its products. In mid-1984, we provided the Linden Fire Prevention Bureau with a complete list

of the products used or stored at our plant. The fire chiefs also have a plot plan of the plant grounds, with each storage tank numbered and its contents identified. We are continuing to work with the Linden fire department and state agencies to improve emergency response planning, procedures and training.

The Committee should be aware that there is a critical need for a central notification system to coordinate emergency response. We are very pleased that the Middlesex County Health Department has taken the initiative in this area and is establishing a system of cascading phone calls. Such a system would allow us to call department officials in the event of an emergency and tell them what communities or areas might be affected, and they would notify the proper New Jersey and New York agencies.

In the interim, until the Middlesex Health Department system is operating, we will continue to notify New Jersey agencies, asin the past. We also have arranged with the New York City Police Department to be the control point to alert Staten Island police precincts to emergencies.

A key concern during an emergency is public health, and there is in place a medical advisory system. It involves one phone call to the New Jersey Poison Control Center in Newark, which would notify both the New Jersey and New York state health departments. Wind vectors would be plotted and county health departments which might be affected would be notified. The county health departments would notify local hospitals and oversee other emergency response needs. Equally important,

Cyanamid physicians are prepared to act as advisors to doctors treating people who might be exposed to chemicals in an emergency at our plant.

There are two new efforts that are in the early stages of addressing additional emergency response needs. First, in December, we joined with other companies and federal and state agencies at the request of Congressman Molinari to set up a plan for odor response.

The second initiative, begun by Senator Lesniak, is the Hazardous Materials Advisory Council, which will define risks in the community and determine plans to minimize those risks and to create a higher level of preparedness to deal with emergencies.

It is Cyanamid's position to support and work to achieve a national hazardous materials control program which would address three areas of concern: worker right-to-know, community right-to-know and emergency response. Cyanamid's written position on this matter is being submitted to you today.

In conclusion, Cyanamid as a company and our plant in Linden are totally committed to preventing accidents that impact on the community and to responding swiftly to emergencies. We must continue to plan and operate on both premises -- prevention and emergency response.

Thank you.

ATTACHMENT A

LINDEN INDUSTRIAL MUTUAL AID COUNCIL

American Cyanamid Company
Citgo
DuPont
Exxon-Bayway refinery
Exxon Research
GAF
General Motors
Merck
Mobil
PSE&G-Linden
PSE&G-Synthetic Natural Gas
Linden Chlorine
Buckeye Pipeline
Northville Terminal
Cook Industrial Lubricant
Solvent Recovery
BP
Linden Civil Defense
Linden Police
Linden Fire
Linden Volunteer Ambulance Corps

ATTACHMENT B

CYANAMID HAZARDOUS MATERIALS POSITION

American Cyanamid Company strongly supports a national hazardous materials policy. While we feel that such a hazardous materials policy should be consistent and uniform in its approach to legislation and regulation, we also feel that if such a program is to be effective it should provide for flexibility at the state and local levels. American Cyanamid Company believes such a hazardous materials policy should effectively address three broad areas: a) workplace right-to-know, b) community right-to-know, and c) emergency response.

Workplace Right-To-Know

On November 25, 1983, the Occupational Safety and Health Administration (OSHA) issued a safety and health standard on hazard communication. The standard mandates a comprehensive, uniform program for manufacturing employees to receive information regarding the potential hazards related to chemicals in the workplace. Cyanamid supports the federal standard and believes that it preempts existing state right-to-know laws as they apply to manufacturers. This preemption was upheld in a recent federal court decision in New Jersey as it applies to the New Jersey Worker and Community Right-To-Know law.

Long before the enactment of the federal OSHA Hazards Communication Standard and any of the 21 states' right-to-know laws, American Cyanamid supported and practiced the worker right-to-know concept as a matter of corporate policy. Cyanamid's Personnel Policy Memorandum 12, April 15, 1979, specifically states that employees are to be informed of the hazard of materials with which they work. We have established hazard communication programs including labels, material safety data sheets, job instructions, safety, and training programs specifically developed to assure employee hazards communication and protection. Cyanamid has long advocated that effective workplace hazard communication programs do not rely on a single element such as labels, but rather on a comprehensive approach that includes labeling, material safety data sheets, employee training, trade secret protection and hazard warnings.

Community Right-To-Know

Cyanamid and federal, state, regional and local leaders must work together in developing workable community right-to-know programs.

Cyanamid believes the public should have access to the chemical hazards information we make available to employees.

This chemical hazard information should be made available to the public through written hazard communication programs developed by industry. Many existing federal, state, and local statutes

require the reporting of large amounts of information regarding potential health and environmental hazards of chemicals. Laws such as the Toxic Substances Control Act (TSCA), Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), Clean Water Act (CWA), Clean Air Act (CAA), and numerous state and local statutes allow for public access but are not readily available to the public through freedom of information provisions. Cyanamid supports programs and policies that would make this information more meaningful to the public but opposes additional reporting requirements which would be duplicative of existing statutes.

Any legislation on community right-to-know must have trade secret provisions identical to the federal standard [Title 29 of the Code of Federal Regulations, Part 1910.1200, Subpart (1) Trade Secrets].

Emergency Response

Cyanamid has long supported programs that provide for maximum protection of employees, the public and emergency response personnel during emergency situations involving hazardous materials.

Cyanamid supports cooperation between chemical manufacturers and state and local fire, safety and emergency service agencies. Information regarding potential hazards associated with chemical manufacturing, processing and use should be available to agencies that are responsible for protecting the community in the event of emergency situations or accidental releases.

Local plant managers and emergency response leaders must establish a regular communications forum to identify and evaluate local concerns, and to develop strategies for reducing hazardous materials emergency risks within both plant sites and the community.

Cyanamid and emergency services leaders should propose, support and actively seek passage of "Hazardous Materials Emergency Response Good Samaritan" laws.

STATEMENT OF

J. ROBERT GOUGHNOUR

MANAGER

GRASSELLI PLANT
LINDEN, NEW JERSEY

E. I. DU PONT DE NEMOURS AND COMPANY

My name is Bob Goughnour and I am manager of Du Pont's Grasselli plant in Linden.

Throughout the years, the Grasselli plant has been a good place to work. The plant now has 184 employees and nearly 2,000 pensioners in New Jersey. The Du Pont Company has approximately 15,000 employees and pensioners in the State.

1985 is the centennial of the Grasselli plant. For 100 years, our plant has produced sulfuric acid, which is a basic building block of American industry and the highest volume chemical used in this country.

The sulfuric acid industry is changing, and foreign competition today is a primary challenge. But change and competition are not new. We have continually upgraded our facilities at the plant to stay ahead of competitive efforts and remain the industry leader. During your visit to the plant on February 1, Senator Lautenberg, you saw the new capital investments that have kept our plant up-to-date.

These improvements have been made consistent with Du Pont's strong commitment to safety, health and environmental control. Grasselli employees have always been safety oriented -- at the plant, at home, in transporting our products and in helping customers use our products safely. Throughout its history, the Grasselli plant has always been a safety leader. We are very proud of our record. The environmental incidents that occurred at the plant in November were unprecedented, and we have taken steps to improve our position in this important

area. The first step we've taken is to conduct special process reviews to cover all possible sources of sulfuric fume releases. These are detailed reviews that take hundreds of hours to complete.

At the request of the New Jersey Department of Environmental Protection, we engaged an outside review firm to supplement the process reviews being done by Du Pont experts. We will assess the potential for accidental releases into the outdoor atmosphere and the potential for environmental risks of such releases in terms of possible effects on human health, animal or plant life and property. We will evaluate usage, storage and equipment safeguards in effect for all chemicals which might become air contaminants. We will address our practices, equipment designs, operating procedures, preventive maintenance procedures and emergency response capability and procedures as they relate to prevention and control of accidental releases. We will implement any remedial action which is technically feasible and economically reasonable.

I would like to summarize briefly the reviews of the November 9 and November 27 incidents. On November 9, an SO_3 fume release occurred when, contrary to established practice, a process line was steamed, allowing less than a gallon of frozen SO_3 to escape. Because the release had the potential of affecting our neighbors, we immediately notified them as well as EPA, NJDEP and local agencies. We also re-instructed plant personnel in the correct use of steam for process lines.

We are conducting a thorough process review with the objective of preventing any fume releases. The process will not be restarted until the review is completed and we are satisfied we have identified and eliminated all possible sources of releases.

On November 27, we were transferring 65% Oleum by pipeline when the mechanical seal on the pump failed, releasing 2-3 gallons of Oleum and creating SO_3 fumes. Personnel in the area responded immediately and closed the valves to isolate the pump. High density foam was sprayed on the leaking pump to suppress the fumes. The fume release lasted about 5 minutes. Based on the short duration of the spill and the fact that we concluded the fumes were dissipated leaving the site, no emergency contacts were made. We have since met with Commissioner Hughey of the New Jersey Department of Environmental Protection and have assured the agency that we will report any incident in the future.

The November 27 incident was investigated thoroughly. The process was reviewed for any potential problems, corrections were made, including the type of seal we use; and the process has been successfully and safely restarted.

A second area of improvement where we have been active is preventive preplanning. This is an ongoing method of pinpointing any possible source of disruption, so it can be documented, corrected and used to supplement work procedures.

The third step we're taking is to increase our involvement in community preparedness for emergencies. This effort has proved effective at a number of other Du Pont sites.

For more than 15 years, the plant has had a 24-hour transportation emergency response capability in cooperation with the CMA. Many times the plant team has responded to calls involving other companies' products, or to requests from community officials and agencies.

The plant is an active member of the team Senator Lesniak has formed to establish a Hazardous Materials Advisory Council for Union and Middlesex counties. This concept has proved itself in Tennessee and Delaware as an excellent forum to address community hazardous materials risks and concerns. Another such council was recently formed in Salem County, New Jersey, headed by Assemblyman Thomas Pankok. Other councils have been formed in New York State. These councils promote a shared awareness of problems and lead to the most effective use of federal, state, local and industry resources during hazardous materials emergencies, should they occur.

Through mutual agreements that encourage greater involvement and cooperation between government, industry and emergency services, a higher level of community preparedness can be reached and sustained.

At the Grasselli plant we are committed to the success of programs both inside and outside the plant that will increase public safety and environmental protection. We are

working inside the plant to prevent the recurrence of any fume releases because we feel that the best place to attack these problems is at the source. We are also working outside the plant to ensure a higher degree of preparedness in the event of any emergency in Union and Middlesex counties.

One of the more important aspects of a safety and health program is the communication of information necessary for individuals or groups to protect themselves from the hazards of chemicals to which they may be exposed, a subject more popularly known as the right to know.

The OSHA Hazard Communication Standard, issued in November 1983 provides a comprehensive communication and training program for manufacturing employers and employees. We have no doubts that the Standard will work and endorse its provisions. However, the Standard does not provide for nonmanufacturing employees or the community. Du Pont supported legislation in Delaware and is supporting legislation in other states to extend information and protection - the right to know - to nonmanufacturing employers, emergency service organizations and the public.

Such legislation provides the Fire Company responsible for a workplace with 1) a list of all hazardous chemicals at the workplace and 2) a Material Safety Data Sheet for each, upon request. The public has access to this same information through an information office set up by a state or its

political subdivision. In addition to this basic information, this legislation provides the Fire Company with the names and telephone numbers for a 24-hour contact with responsible representatives of the business and access to the workplace to obtain information on storage, quantity, location or other information necessary for emergency planning. All emergency agencies have access to this information through the fire organizations.

We believe this system will provide necessary information to all aspects of the community through logical sources. The system provides the components needed to support emergency response programs, which we also support strongly.

As the Grasselli plant begins its second 100 years, we are convinced we will be able to safely make our products for use by the photographic, detergent and steel industries.

We are committed to working in close cooperation with the regulatory agencies, legislators and local officials in doing our part in making New Jersey an outstanding place to live and work.

Thank you.

# # # #

TESTIMONY OF
JACK W. MCGRAW
ACTING ASSISTANT ADMINISTRATOR
FOR SOLID WASTE AND EMERGENCY RESPONSE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
NEWARK, NEW JERSEY
FEBRUARY 18, 1985

I am Jack W. McGraw, Acting Assistant Administrator for Solid Waste and Emergency Response, for the U.S. Environmental Protection Agency. Accompanying me today are Christopher J. Daggett, EPA Regional Administrator for Region 2 and Don Clay, Director of the headquarter's Office of Toxic Substances. I thank you for the opportunity to appear today to discuss the problem of uncontrolled releases of toxic chemicals.

I commend your interest in improving programs for preventing and responding to these uncontrolled releases and look forward to working with you in achieving our shared goal of reducing the threat to health and the environment posed by these incidents.

There is no need for me to stress the gravity of the threat posed by uncontrolled chemical releases and the importance of ensuring adequate mechanisms for prevention and response. The tragedy in Bhopal, India, is a grim reminder as are the recent series of chemical releases in New Jersey, including last week's explosion in a paint factory in Middlesex, N.J.

We must keep in mind, however, that episodic chemical releases are normally local in nature and require the same types of local response authorities as would be activitated for a fire or other emergency; they are not inherently federal responsibilities.

On the other hand, we have federal capabilities to help State and local authorities, which we have done and will continue to do.

A good example of active State and local roles in response to an accidental release is the response to the Middlesex, N.J., incident.

At approximately 10:00 a.m. on February 12, 1985, an explosion occurred at Chemray Coatings Corp., and the building became totally enveloped in the ensuing fire. EPA was notified and was on scene by 11:30 a.m. The New Jersey State Police coordinated the response activities with Federal, State and local agencies participating.

Specifically, EPA's Environmental Response Team and Region 2 staff were immediately on scene and provided technical assistance to the county health department, which was coordinating the environmental activities. EPA also conducted air monitoring in an area where the firemen were working and downwind under the plume. Additional air monitoring was done the following day.

The fire was declared under control around 5:00 p.m. The fire departments stayed through the night and on Wednesday continued the routine arson investigation.

The N.J. Department of Environmental Protection met with company officials on February 13 to determine whether the responsible party will stabilize the site. If the company cannot fund the clean-up, New Jersey spill fund monies will be spent.

The response by State and local authorities we have discussed is part of a shared responsibility in which industry must take a role as well.

Internal Industry Regulation

It is important to realize that the chemical industry has an enormous self-interest in avoiding accidental releases of toxic chemicals and imposes a strong measure of self-regulation. The chemical industry also has an important share of responsibilities for preventing or responding to chemical releases. Our review of the chemical industry's safety record points to a real paradox. On the one hand, we find that releases of chemicals, even chemicals of substantial toxicity, are more than everyday events. But we must temper this with the equally significant fact that, year after year, the chemical industry earns one of the best safety records in American industry. In fact, the National Safety Council reports that, in terms of worker injury and death, the chemical industry has had the best record of safety in three of the last four years.

Here is an industry with the potential to cause severe human harm through accidents. The industry actually experiences a fair number of accidents. Yet the accidents cause relatively little harm. At first glance, that seems hard to explain.

The answer we have found is that most members of the chemical industry are properly aware of the dangers inherent in its work, and so they often build chemical processes designed to reduce the likelihood of accidental releases; they build emergency back-up systems that limit and contain the effects of accidents that do happen; and they maintain elaborate systems for emergency response that go into effect immediately in the event of even minor mishaps.

Chemical firms want to protect their workers, their plants and equipment, their profitability, and their insurability. Accordingly, they are motivated to prevent and control the effects of accidents.

That motivation to ensure plant safety is enhanced by such external influences as insurance requirements, national safety codes, local ordinances, State regulations, and Federal control through OSHA, DOT, FEMA, and EPA. The record shows that, in net effect, this multi-tiered system for chemical accident prevention and response in the United States has done an excellent job.

Still, no system is so good that it should remain free from examination to see if it can be improved. We at EPA are looking to see whether there are practical and efficient ways to join the public interest with the private to ensure that all members of the chemical industry apply the highest standards of safety in day-to-day operations.

We also must realistically take into account the scope and impact of chemical plants in this country, demonstrated by a 1984 estimate of 60,000 chemicals manufactured annually, weighing in excess of 200 billion pounds, with sales of $210 billion, coupled with a 1981 estimate of 6500 manufacturing plant sites and over half a million people employed. As you can see, addressing these issues will be a long-term effort which spans all program offices in EPA, other Federal agencies, State and local agencies, industry groups and associations, individual companies, environmental groups and

citizen/community groups.

As we review EPA's authorities and responsibilities in this area, I think it is important to emphasize this shared responsibility by all segments of society dealing with chemical releases.

In addition to the Federal responsibilities, the State and local governments' major role in preventing and responding to these releases, and industry's responsibility to examine its systems to improve safety, detection and prevention measures, we believe citizens have a responsibility to become more informed about potential threats from chemical plants and appropriate steps to take once a release has occurred. The need for this tapestry of responsibilities will be underscored as we describe the complexity and the coordination required to deal effectively with these chemical releases.

We are undertaking a thorough review of both the preventive measures existing in this country to minimize the risk of a similar tragedy, and the response measures we have in place to deal with the consequences of such an accident To that end, the Administrator asked me to head the MIC Task Force to coordinate EPA and Federal interagency activities concerning the Bhopal/MIC situation, collect and disseminate information, and coordinate any international activities that may arise with the State Department. The major thrust of the task force is to identify

the complex problems raised by the Bhopal incident; analyze current Federal authorities to prevent or respond to a Bhopal-type incident; and, analyze the possible prevention/response actions which EPA could take under these authorities.

The scope of the problems raised is very complex. While EPA is continually dealing with issues related to chronic releases of hazardous or toxic substances--in both preventing and responding to these releases--the issue of episodic releases of hazardous substances has been addressed primarily through response and preparedness activities.

Prevention of episodic releases involves issues of: plant safety, design, maintenance, back-up and warning systems; adequacy of industry self-regulation; effective preparedness and response training of workers; effective contingency and preparedness planning with the surrounding community--including development of emergency and evacuation plans and exercises; accurate and up-to-date information on what hazardous substances are being produced, where they are produced, stored, transported and consumed or processed further; and monitoring and enforcing of industry compliance with Federal, State and local laws and regulations regarding the handling of these hazardous substances.

Federal Responsibilities

EPA and the Federal family is prepared to manage emergencies and to address immediate hazards when they occur, as the response last week in Middlesex demonstrated. A number of authorities and systems are in place for such a contingency.

Our single most important response authority is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, which gives EPA authority and resources to address immediate threats to human health and the environment. It also provides a mechanism for drawing together other Federal response capabilities and coordinating comprehensive responses to imminent hazard situations.

Sharing in the Federal area is obvious by the make-up of our panel here today. The Department of Health and Human Services (HHS) plays a key role in assisting us in all health aspects of the Superfund program. OSHA, of course, has responsibility for worker protection at Superfund sites, just as it has at chemical manufacturing plants and other facilities throughout the country. EPA's research program applies expertise and completed research obtained from programs such as RCRA to the cleanup of Superfund sites. This technical support provides guidance documents, operating manuals, risk assessment techniques, and expertise to meet the specific requirements of EPA program and regional offices, states and local authorities.

The National Contingency Plan prescribes Federal response authorities under CERCLA for dealing with releases into the environment of hazardous substances and pollutants or contaminants that may present an imminent and substantial threat to human health or welfare. It is the document used to manage all Federal emergency response activities for hazardous substances and oil.

The primary vehicle for coordinating Federal agency activities under the NCP is the National Response Team (NRT). The NRT carries out national planning and response coordination, and serves as the head of a highly organized Federal emergency response network. The team is composed of the 12 Federal agencies with major environmental and public health responsibilities. Other Federal agencies can also be called upon to participate as needed.

EPA serves as the NRT chair, and the U.S. Coast Guard serves as vice chair. The NRT has met several times in Washington specifically to share information on the Bhopal incident and its implications for U.S. industries and communities and to coordinate Federal agency activities related to this matter.

For each of the 10 Federal regions, there is also a Regional Response Team (RRT) which is the regional counterpart to the NRT. These RRTs serve as planning and preparedness bodies before a response, and provide coordination and advice during response actions. Each RRT is composed of regional representatives of the NRT agencies and state and local governments, as appropriate.

EPA and the Coast Guard also maintain staffs trained in environmental response in both regional offices and Coast Guard districts across the country. These predesignated on-scene coordinators (OSC) direct and coordinate response actions. They are authorized to obtain expertise and resources from

other Federal agencies as well as private contractors.

Both the NRT and the RRTs can be activated to provide support to the on-scene coordinator. They assist in obtaining and coordinating Federal resources, equipment, personnel and expertise during response actions.

Representatives of state agencies serve on the RRT along with local agencies such as the New York City Department of Environmental Protection. As a general rule EPA staff serve as on-scene coordinators for discharges or releases that occur in a designated inland zone. Coast Guard personnel assume that role when a release or discharge affects coastal waters, the coastal zone, or the Great Lakes. For most of the New York Metropolitan area, the Coast Guard is the Federal pre-designated OSC.

EPA has established as a special national resource an Environmental Response Team in Edison, New Jersey, staffed by specially trained scientists and engineers who augment EPA's regional response staff and provide information on how to deal with emergencies anywhere in the country. The team also provides emergency response training for public sector response personnel.

Under Superfund, this response network can act to evacuate an area, take measures to stop a release, and clean up any contamination. The network works. In mid-November of this year, the FMC plant in Middleport, NY, experienced a release of MIC. Company, State, and local officials reacted and responded rapidly,

evacuating a school and neighboring residents. There were no serious injuries and the incident was quickly resolved.

While the National Contingency Plan describes the policies and procedures for this national response mechanism--composed of Federal, State, local, and private participants--there are similar regional contingency plans for each Federal region as well as some plans for State and local governments. In addition, the National Response Team has several initiatives underway on emergency response and State and local preparedness and training. The NRT has established a Preparedness Committee to 1) identify existing responsibilities and authorities of the NRT agencies related to hazardous materials emergency response preparedness and provide guidance or direct support relevant to State and local preparedness; 2) identify gaps, overlaps, and voids in these programs; and 3) recommend program and policy alternatives to the NRT to provide maximum Federal coordination in enhancing preparedness capabilities of State and local governments for hazardous materials emergencies.

The NRT/RRT forum is also being exercised to assess the existing level of oil and hazardous substances response preparedness at the Federal, State, and local levels covering general response preparedness, contingency planning, training, and equipment availability. From the results of this assessment, the NRT will identify deficiencies in response capability and will evaluate assistance to State and local governments.

EPA is also working with the Hazardous Materials Advisory Council to obtain similar preparedness information from the private sector.

EPA conducts a program to train emergency response personnel from Federal, State, and local levels in several areas of hazardous environmental response: monitoring and sampling; hazard evaluation, mitigation and treatment; and, personnel protection. EPA conducts approximately 90 such sessions a year for around 2200 students: approximately 45% are State personnel; 35% are from EPA; 15% are other Federal personnel; and 5% are from local governments.

Other Federal departments and agencies, particularly the Department of Transportation, U.S. Coast Guard, and the Federal Emergency Management Agency, provide hazardous material preparedness and response training.

Legal Authorities

Currently, the Task Force is engaged in a thorough analysis of Federal authorities available to prevent and respond to accidental chemical releases. The Federal Government has a large array of legal authorities to perform its responsibilities in responding to releases, and those authorities already in place have fundamentally worked very well. Although we do not foresee a need for new statutory authorities, we believe it is important to review our authorities carefully to make sure the response system is working properly.

We assume that the potential scope of activities that might give rise to an accidental chemical release is broad. Thus, we are examining the use of existing authorities to prevent releases to all environmental media, including air, surface waters, ground water, or subsurface soils. Because EPA is not the only player in the existing scheme for preventing and responding to chemical releases, our analysis must include an examination of not only EPA authorities, but also those of other federal departments and agencies, such as DOT, HHS, OSHA, and FEMA, and State and local governments.

With respect to our information-gathering authorities, a major source of information is section 103(a) of CERCLA. That section requires that facilities or vessels report releases of hazardous substances to the National Response Center if they are equal to or exceed reportable quantities established under section 102 of CERCLA. Last week, the Administrator signed a rule establishing reportable quantities for hazardous substances and expressed his intention to vigorously enforce the reporting requirement.

Another information-gathering authority under CERCLA is section 104(e). This provision authorizes EPA to inspect certain facilities where hazardous substances are handled or to require

facility owners or operators to furnish information, in cases where such inspections and information will assist the Agency in determining the need to respond to a release or to enforce other requirements of CERCLA (such as the reportable quantity requirements).

The Toxic Substances Control Act (TSCA) provides a number of information-gathering authorities. Through rulemaking proceedings, EPA can use section 8 to require information, (including production, use, and exposure information, as well as health and safety studies) from chemical manufacturers and processors provided it is reasonably ascertainable, necessary, and not duplicative.

Section 8(c) requires manufacturers and processors to collect and, if requested, submit information about any allegations that a chemical caused significant adverse reactions to health and the environment, including consumer allegations and reports of occupational disease or injury.

In addition, section 8(e) establishes a requirement that any person or business engaged in manufacturing, processing, or distributing chemical substances submit to EPA any information that reasonably supports the conclusion that a chemical substance or mixture presents a substantial risk of injury to health or the environment. A substantial risk

of injury in this context means a risk of considerable concern because of (a) the seriousness of the effect and (b) the fact or probability of its occurrence.

Each of EPA's other statutes also contains information-gathering authorities that might be used to inspect or gather information from a facility that handles toxic chemicals. EPA's ability to use any of these authorities, however, turns upon the purpose for which the authority is invoked and whether the items to be inspected or the information to be gathered fall within the scope of the authority. For example, EPA may use section 3007 of the Resource Conservation and Recovery Act (RCRA) to inspect facilities that handle hazardous wastes, when the inspection is specifically for the purpose of developing or assisting in the development of or enforcing a regulation under RCRA Subtitle C. In this case, EPA must have reason to believe that hazardous wastes may be present at the facility. Similar guidance defines the use of the inspection and information-gathering authorities provided under section 3005 of RCRA, section 114 of the Clean Air Act, and Section 308 of the Clean Water Act.

With respect to response authorities, our principal authority is section 104 of CERCLA. We have already described our use of that section to take removal and remedial actions that are consistent with the National Contingency Plan.

In addition to this programmatic response authority, EPA has various emergency authorities that allow us to take enforcement action to enjoin activities that threaten human health and the environment. These authorities, while quite flexible, require EPA to make certain findings as a factual predicate to bringing its enforcement action. Most authorities, for example, require EPA to establish that an imminent and substantial endangerment to human health and environment is presented by a certain situation. In examining air releases from chemical plants, three potential authorities need to be examined carefully.

Section 303 of the Clean Air Act allows EPA to take action whenever "a source or combination of sources" is presently an imminent and substantial threat to the health of persons. Section 106 of CERCLA allows EPA to act to abate "an imminent or substantial endangerment to the public health or welfare or the environment" because of an actual or threatened release of a hazardous substance from a facility. Under section 7 of TSCA, we are authorized to seize an "imminently hazardous chemical substance or mixture" and to seek relief against any person who manufactures, processes, distributes in commerce or uses such chemical substances.

With respect to prevention, I think we all recognize that it is impossible to totally eliminate the potential for accidental releases at complex industrial facilities. We are examining the use of the following authorities, however, to reduce the potential for accidents and to mitigate the harm caused by such accidents should they occur.

TSCA includes provisions that give EPA authority to control "unreasonable risks" from activities involving chemical substances or mixtures. Through rulemaking proceedings, EPA can use TSCA section 6 to ban or limit the manufacture processing, or distribution in commerce of a chemical substance or mixture. In addition the Administrator can prohibit or otherwise regulate any manner or method of the commercial use or disposal for commercial purposes of a chemical substance or mixture. To impose any controls or bans under section 6, EPA must, among other things, determine that the benefits of such controls or bans outweigh their costs.

To the extent that chemical substances of concern are new chemicals not on the TSCA Inventory, TSCA section 5 provides unique review authority. Information on the projected manufacture, import, processing, distribution, use, and disposal of such substances must be submitted to the Agency for review

at least 90 days before manufacture or import may begin. EPA may impose restrictions on such substances in the nature of a ban or limitation on manufacturing, processing, distribution in commerce, use or disposal. However, restrictions may only be imposed pending the development by submitters of data adequate to resolve uncertainities about substance. If adequate data is developed, EPA must look to its other authorities for long-term control options. If EPA has adequate data, section 5(f) allows the Agency either to ban manufacture or import of the substance or to issue an immediately effective proposed rule imposing regulatory controls.

Other regulatory authorities might be used to impose controls on specific sources of release. RCRA Subtitle C and the Safe Drinking Water Act UIC provisions provide EPA authority to impose regulatory controls on facilities that handle or manage wastes. Those chemicals that satisfy the RCRA definition of "hazardous waste" are subject to a complete set of regulatory controls under those provisions.

The new RCRA amendments applicable to underground storage tanks broaden EPA's authority to prevent releases from product storage tanks. EPA is now in the process of developing regulations for the safe design, installation,

operation, maintenance and management of such tanks. Although this authority was designed to address releases to soil, ground water and surface water, and not to the air, regulatory controls under development are likely to reduce the chances of a release to the air.

Under section 112 of the Clean Air Act, EPA is authorized to establish emission standards for hazardous air pollutants and, in the event that numerical emission standards are not feasible, to impose design, equipment, work practice, or operational standards. Historically, these standards have been aimed at reducing emissions during normal operations of a source. They have not been aimed primarily at reducing the likelihood of a major industrial accident.

Further Action Being Taken

Region 2 has two important efforts underway which Chris Daggett, EPA's Region 2 Administrator, will be able to discuss further. One is the Staten Island Cooperative Odor Survey, which brings industry and regulatory agencies together to reduce incidents at facilities, improve communications and coordination, and respond more quickly to episodic releases.

The second effort underway is the Hazardous Chemical Task Force, which is involved with on-site multi-media compliance inspections, reviews of emergency response capabilities and contingency plans, and identifying areas in the region where there is a strong possibility for accidental releases or transportation

accidents involving hazardous chemicals. In addition, there are several other actions the Agency is taking related to releases of hazardous chemicals.

Reportable Quantities Rule

As I noted earlier, the reportable quantity (RQ) final rule and a companion Notice of Proposed Rulemaking (NPRM) was signed by Lee M. Thomas last week. The major purpose of this rule and its notification requirements is to alert the appropriate government officials to releases of hazardous substances that may require emergency response. The RQs and the CERCLA notification requirements serve as a trigger to inform the government of a hazardous substance release so that the need for a response may be assessed by the predesignated Federal On-Scene-Coordinator pursuant to requirements as set forth in the National Contingency Plan.

The reportable quantity adjustments allow government officials to focus response efforts on those releases that may pose the greatest threat to public health and welfare and the environment. Not all reported releases will require field response action. However, parties are responsible for response costs or natural resource damage claims, even if the amount released is less than the applicable RQ.

The CERCLA list currently contains 698 hazardous substances. The final rule adjusts RQs for 340 hazardous substances, and the NPRM proposes adjustments for an additional 105 hazardous substances. EPA is currently assessing appropriate RQ adjustments

for the remaining 253 substances. Additional hazardous substances will be added to the list by the other environmental statutes and implementing regulations which comprise the CERCLA list. Specific air pollutants, water pollutants, and hazardous wastes will be added to the list as appropriate.

Finally, let me say that we are aware of the great interest that there is in many quarters for the passage of community right-to-know legislation. We have also followed with interest the steps taken already by Monsanto and others.

There are many different forms that such legislation can take, leading to different implications for all concerned parties. We recognize that if citizens are to share in the responsibilities as I discussed earlier, their access to information about substances manufactured, used, stored or otherwise present at a chemical plant site is an important factor. We are presently analyzing the provisions of key State community right-to-know laws and trying to develop a better understanding of all the issues involved.

In closing, I would like to reiterate that we will be be working closely on all these efforts with other Federal agencies, State and local governments, industry groups and associations, individual companies, and environmental groups and citizen/ community groups, in order to find the best solutions to this most serious problem.

This concludes my prepared statement. I thank you again for the opportunity to appear today and we will be happy to answer any questions you may have.

STATEMENT OF JANE A. MATHESON
DEPUTY ASSISTANT SECRETARY OF LABOR
FOR OCCUPATIONAL SAFETY AND HEALTH
BEFORE THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

FEBRUARY 18, 1985

Mr. Chairman and members of the Committee:

Thank you for the opportunity to discuss the role of the Occupational Safety and Health Administration (OSHA) in the nation's chemical industry. I should like to begin by describing OSHA's overall responsibility for workplace safety and health.

OSHA's Authority:

OSHA was established pursuant to the Occupational Safety and Health Act of 1970, (the OSH Act). This statute grants OSHA broad authority to promote the safety and health of American employees on the job. That authority extends to private sector employers with one or more employees, but does not extend beyond the work environment. The Act authorizes OSHA to establish workplace safety and health standards, conduct inspections to enforce the standards, issue citations and propose monetary penalties for violations of the Act, require employers to abate hazards, provide for training and education, and encourage employer-employee cooperative programs to reduce workplace hazards.

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The Act also encourages the states to assume full responsibility for the administration and enforcement of their own occupational safety and health programs, or "State Plans," as they are known. OSHA provides up to fifty percent of the state's operating costs and monitors the operation of state occupational safety and health efforts to ensure that the state maintains an effective job safety and health program. Currently, there are twenty-three states and jurisdictions operating full OSHA Plans. All State Plans, as required by the OSH Act, provide coverage for state and local government employees, whom the Act excludes from coverage under the federal program. Two states--Connecticut and New York--administer partial Plans which cover only state and local government employees; private sector employment remains under federal jurisdiction in these two states. The states promulgate and enforce their own safety and health standards under state law. These standards are required to be "at least as effective" as the federal standards.

OSHA Standards That Address Chemical Hazards:

OSHA has issued a number of health standards that address the potential hazards of workplace chemicals. These include permissible exposure limits or maximum allowable concentrations for approximately 400 toxic substances and materials, and comprehensive standards for an additional 22 toxic substances. There are also OSHA standards that establish respiratory protection requirements and address the use of personal protective equipment.

In addition, the Agency has promulgated safety standards that address potential injury-producing hazards in chemical operations. For example, there are OSHA standards covering flammable and combustible liquids, reactive and unstable liquids, and the design, installation and operation of storage tanks. OSHA also has standards that include provisions for training requirements, fire protection and emergency evacuation plans.

In those instances where a recognized hazard is created by conditions not covered by a specific standard, OSHA may rely on the General Duty Clause, section 5(a)(1) of the OSH Act, to mitigate employee exposure. The General Duty Clause is used only when there is no applicable standard, when the hazard is clearly recognized, when the hazard presents a probability of death or serious harm to employees, and when abatement is feasible. In the chemical industry, for example, section 5(a)(1) has been cited where an employer failed to provide a properly sized pressure release system for chemical tanks, thereby exposing employees to potential hazards of vapor inhalation and serious burns.

For the thousands of chemicals in use in workplaces today, OSHA has promulgated a generic Hazard Communication Standard. Issued in November 1983 and commonly referred to as an employee "right-to-know" regulation, this standard requires the creation of information, in the form of labels and material safety data sheets, to apprise employees about chemical hazards in their workplaces. OSHA's Hazard Communication Standard requires chemical manufacturers and importers to provide such information

to their own employees and to industrial users of their products. Most importantly, the standard also requires these employers to provide training to ensure that employees know not only what hazards there are in working with chemical substances, but also what precautions may be taken to contain those hazards.

The labeling and material safety data sheet requirements of the Hazard Communication Standard become effective on November 25, 1985; the training requirements as well as all other requirements of the standard become effective on May 25, 1986. Because of the large number of chemical substances that had to be evaluated and documents that had to be prepared for substances that were deemed hazardous, a phase-in period was necessary for compliance with the standard. There are, by our estimates, roughly 575,000 different chemical products and mixtures in the nation's industrial workplaces.

Although the Hazard Communication Standard is not yet in effect, many employers have already begun to implement right-to-know programs in response to the rule. For example, at the public hearings held in the summer of 1982 as part of the rulemaking process, the testimony presented indicated that the then-existing training programs of some large chemical manufacturers exceeded the requirements of the OSHA standard. In order to implement training programs of this kind, employers would have to have labeled their products and provided material safety data sheets to employees. Thus this testimony makes clear that some employers at that time were already in compliance with provisions of the Hazard Communication Standard. A recent article in

Chemical Week (January 23, 1985) also indicates that the existence of the new OSHA regulation has stimulated compliance with its provisions, even though the standard itself is not yet in effect. The article describes a collective bargaining agreement between the United Auto Workers union and Ford Motor Company and General Motors Corporation, an agreement which includes provisions based on employees' right to know about the chemicals with which they work.

Whereas OSHA's Hazard Communication Standard requires the creation of new information about chemical hazards in the workplace, OSHA's Medical Records Access Standard requires the provision of existing information about employee exposure to toxic chemicals. OSHA issued its standard on Access to Employee Exposure and Medical Records in May 1980; the standard went into effect in August of that year. It requires employers to maintain and preserve exposure and medical records of employees' occupational exposure to toxic substances or potentially harmful physical agents. Moreover, employers must ensure that employees who have been exposed, as well as those who may be exposed, employee representatives, and OSHA all have access to pertinent exposure records. Such records include air monitoring results, biological monitoring results, material safety data sheets and any other record which reveals the identity of a toxic substance. In addition, upon entering into employment and annually thereafter, employees must be informed of their rights under the standard and of the requisite procedures for exercising those rights.

Although the Access standard does not require that any new records be created, it does require access to existing information. As noted, many of the larger chemical companies have a great deal of information available concerning the substances used in their operations. Thus, OSHA's Access rule provides a means for apprising employees of possible hazards associated with the chemicals used in their workplaces. In Fiscal Year 1984, OSHA issued more than 450 citations for violations of the standard.

Enforcement

OSHA conducts periodic, unannounced inspections of workplaces to determine whether compliance with the Act and with OSHA's standards is being achieved. Based on the inspector's findings, OSHA may issue citations to employers and may propose monetary penalties of up to $10,000 for each violation depending upon the seriousness of the hazard and the statutory characterization of the violation (for example, repeated, willful, failure-to-abate). OSHA citations require employers to correct hazardous conditions within a reasonable, stipulated time limit.

Imminent danger situations are given top priority for enforcement action. An imminent danger, as defined by the OSH Act, is any condition where there is a reasonable certainty that a danger exists which can be expected to cause death or serious physical harm immediately or before the danger can be eliminated through normal enforcement procedures. If an employer fails to correct an imminent danger, OSHA has the authority to seek a

temporary restraining order from the United States district court to provide an immediate shutdown of the hazardous operation or section of the workplace where the imminent danger exists.

OSHA's policy in enforcing the Act is to deploy inspection resources as effectively and efficiently as possible. The Agency uses two approaches in sending inspectors out to investigate workplace hazards. The first is an unprogrammed approach in which OSHA responds to reports of alleged hazards and investigates complaints, referrals, fatalities or catastrophes, and reports of imminent danger. The second is a programmed approach in which OSHA determines from available data the industries in which hazards are most likely to exist. In the case of safety inspections, inspectors are sent to establishments in industries in the manufacturing sector with lost workday injury (LWDI) rates higher than the national average for all industries, as estimated by the Bureau of Labor Statistics (BLS) in its Annual Survey. Lost workday injuries are the more serious of job-related injuries since, by definition, they result in time lost from work. In 1983 (the latest year for which BLS data are available), the national lost workday injury (LWDI) rate for all private sector establishments was 3.4 lost workday injuries per 100 fulltime employees. For the manufacturing sector that same year the national LWDI rate was 4.3, and for chemical manufacturing 2.4.

Since OSHA's high-hazard targeting lists for safety inspections in the manufacturing sector are based on state LWDI rates for subcategories of industries, some chemical manufacturers are

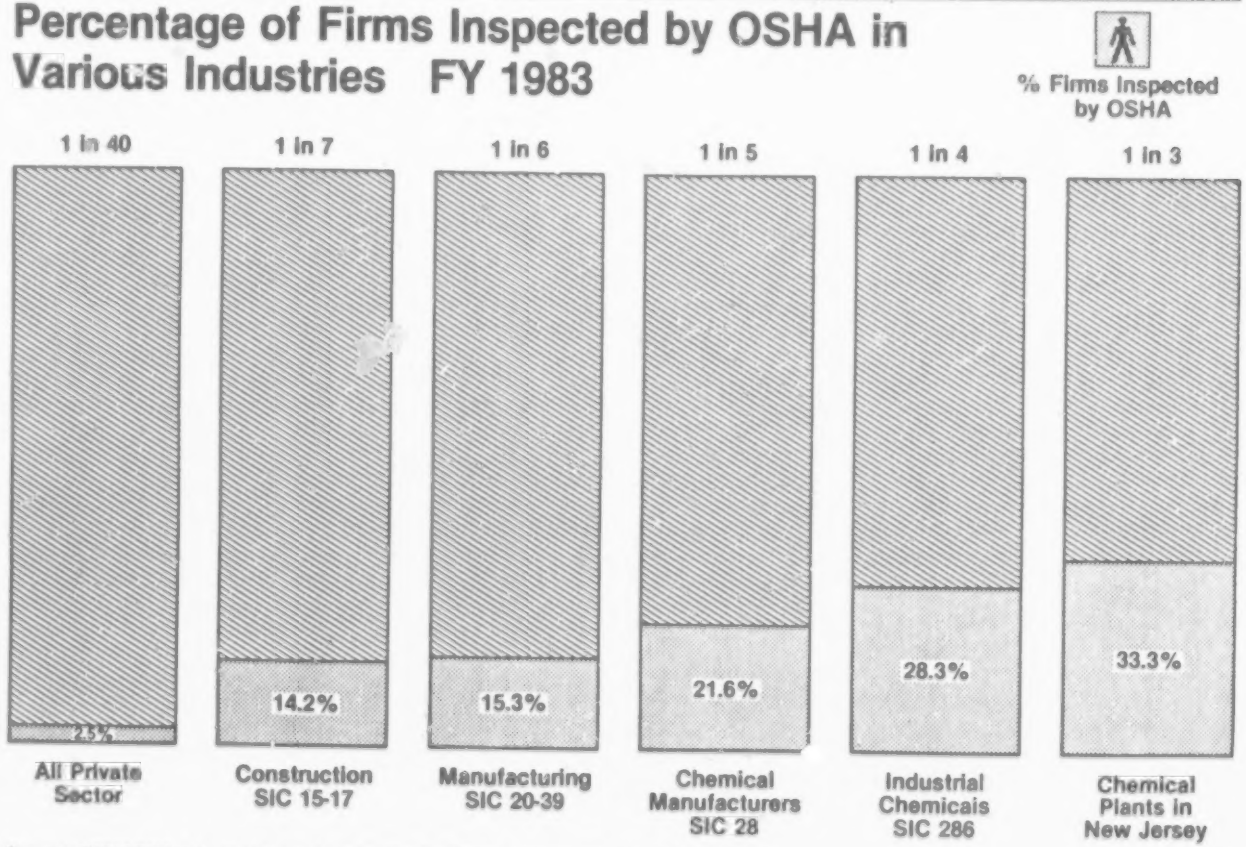
targeted for OSHA safety inspections, but many, because of their good safety records, are not. They are, however, targeted for OSHA's health inspections. OSHA conducts programmed health inspections at establishments in industries with a high rate of past serious health violations.

In the chemical industry as a whole, there are about 11,000 firms nationwide, an estimated 6,700 of which are under Federal OSHA coverage and 4,300 under the State-Plan states. In FY 1983, Federal OSHA inspected 1450 chemical manufacturing plants, or more than one in every five such establishments under Federal coverage. (In that same year the States inspected an additional 1183 chemical plants.) To put that in perspective, in FY 1983, Federal OSHA inspected one in every 40 of all the establishments it covers, one in every six manufacturing establishments, and more than one in every four industrial organic chemical manufacturers. In New Jersey, where there are about 900 chemical manufacturing plants, OSHA has been inspecting about one in every three such plants each year. The accompanying chart illustrates the high inspection presence that OSHA maintains in the chemical industry.

Other OSHA Programs

In addition to standards-setting and enforcement, the OSH Act authorizes a variety of assistance programs to address workplace hazards. Among the programs offered to assist employers and employees in reducing hazards is OSHA's onsite consultation program, which is conducted under state auspices with 90 percent federal funding. Under this program, an employer may

Percentage of Firms Inspected by OSHA in Various Industries FY 1983



Source: OSHA/MIS - Inspection Data County Business - Coverage Data Patterns 1981

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request a free consultative visit. Such a visit, unlike an OSHA inspection, does not present the possibility of the issuance of a citation. Consultants assist employers by identifying workplace hazards and suggesting cost-effective methods for abatement. They also advise employers on ways to improve their safety and health programs and recommend training on control of hazards. In Fiscal Year 1984, approximately 37,000 consultation visits were conducted.

Other methods authorized by the OSH Act to promote improved workplace safety and health include the Agency's Voluntary Protection Programs (VPP). These programs supplement OSHA's enforcement efforts by recognizing employers who have in place workplace safety and health programs that go beyond Agency requirements. At present there are thirty-three worksites that participate in one of three categories of VPP, and are exempted from programmed OSHA inspections as a result of this participation. The injury rates of the twenty-one establishments in the Star Program, the most prestigious of the VPP, are well below the average for their industries. Chemical companies operate thirteen of the twenty-one Star worksites. Because many chemicals firms have internal programs for hazard recognition, employee training and sophisticated emergency procedures, they fit easily into VPP, which encourages companies concerned about workplace safety and health to operate their own programs.

As part of its educational curriculum for Federal and State compliance officers as well as personnel of other Federal agencies and the private sector, OSHA's Training Institute

conducts classes in industrial hygiene and toxicology. The Training Institute makes lesson plans and course materials available to the public through OSHA Regional and Area Offices.

OSHA also provides grants, intended as seed money, to labor unions, trade associations, and other non-profit groups to enable them to develop competence in delivering training and educational services to their constituencies. Many of the recipients of these "New Directions" training grants have focused attention on working conditions in chemical plants. For example, a university that received an OSHA grant developed training programs for maintenance workers in the chemical industry to alert them to the potential hazards in their work.

In addition, OSHA prepares informational material to assist employees and employers in controlling hazards. Last year the Agency issued a booklet entitled "Emergency Response in the Workplace," which explains the basic steps needed to handle job-related emergencies such as chemical spills and releases of toxic gases. The pamphlet is intended to provide guidance to small businesses that lack safety and technical resources of their own.

OSHA-EPA Cooperation:

OSHA recognizes that the workplace environment is often closely related to the general environment. Workplace hazards sometimes become community hazards, and it is incumbent upon OSHA to work with the Environmental Protection Agency (EPA) to avoid duplication of effort and ensure that there are no regulatory gaps through which toxic hazards may slip. OSHA is working at

present with EPA to implement the Superfund program. While EPA is the lead agency for Superfund, the two agencies have agreed that OSHA has the primary role in providing for the safety and health of employees at hazardous waste sites. OSHA conducts inspections at Superfund clean-up sites and has provided technical assistance to employers and employees at these worksites.

Notification of Spills and Leaks:

The Occupational Safety and Health Act does not require employers to notify OSHA of chemical leaks or spills. There are requirements, however, in OSHA's comprehensive health standards for reporting potentially toxic releases. OSHA's standard for thirteen carcinogenic chemicals, which was issued in 1974, requires that employers report to the nearest OSHA office any incidents resulting in the release of any of these chemicals into areas where employees may potentially be exposed. Such incidents must be reported within twenty-four hours and a written report must be completed within fifteen days. OSHA's standards for vinyl chloride and acrylonitrile contain provisions requiring that emergencies--that is, any occurrence likely to result in a massive release--must be reported to the nearest OSHA office within twenty-four hours, for vinyl chloride, and within seventy-two hours for acrylonitrile. Additional information must be supplied in writing upon OSHA's request. There is also an OSHA reporting requirement which might result in some degree of notification to the Agency of leaks or spills. This is the Agency's requirement that all employers must report to the

nearest OSHA office within 48 hours any accident that results in a fatality or the hospitalization of five or more employees. Such accidents may involve chemical leaks or spills, which would then be reported to OSHA, not, however, because a leak had occurred, but rather because a number of hospitalizations or a death had resulted.

The Act is specific about notifying employees of potentially toxic exposures. Section 8(c)(3) of the Act requires employers to promptly notify employees who are exposed to toxic materials at levels which exceed those prescribed by OSHA standards. Many of OSHA's comprehensive health standards issued under section 6(b) of the Act, such as arsenic and coke oven emissions, reiterate this statutory requirement and prescribe in detail how employees are to be notified. The Medical Records Access Standard, which has been described to you, requires that monitoring data be made available to employees. Furthermore, regulations issued under the reporting requirements of the Act require employers to post in their workplace copies of any citation so that employees are informed of the hazard perceived by OSHA. In the case of toxic substances, the citation would include a description of the contaminant for which OSHA took workplace samples, the exposure levels found, the date on which the sampling was conducted, the operations or processes involved, the health effects of employee exposure to the substance, and the feasible control methods.

Spills and Leaks in New Jersey:

The Committee has expressed an interest in recent chemical leaks and spills in New Jersey. While the Act, as noted, does not require employers to notify OSHA of chemical leaks or spills, the Agency investigates such incidents when they are brought to its attention and when employees are exposed. For example, a major chemical release occurred at the American Cyanamid Warners plant in Linden, New Jersey, on January 21, 1985. Four employees at the plant were exposed to dimethoate solution. Acting on the basis of media reports, OSHA arrived at the plant to conduct an investigation on the day following the exposures. Agency inspectors reviewed the details of the incident and examined operation processes, emergency procedures, protective equipment, maintenance procedures, and employee training. OSHA interviewed representatives of management and labor and met with officials of the New Jersey Department of Environmental Protection. At present OSHA's Area Office is evaluating the information gathered during the inspection.

In the past several years, OSHA has investigated many incidents in the chemical industry in New Jersey. For the five-year period, FY 1980 through 1984, OSHA conducted approximately 6,000 inspections in the chemical industry nationwide; 1,552 of these, or more than one-fourth, were conducted in New Jersey chemical plants. In the past few months, in addition to its investigation in American Cyanamid's Linden Plant, OSHA has investigated leaks or spills at the Colgate-Palmolive facility in Jersey City, the Industrial Chemical Corporation in West Milford,

the Essex Chemical Corporation in Newark, and the J.B. Myers Corporation of Moonachie. We will be happy to provide the Committee with details of these inspections.

OSHA Actions in the Aftermath of the Bhopal Disaster:

The recent disaster in Bhopal, India, has sharply increased the general awareness of potential hazards to employees in chemical manufacturing plants, and to the people who live in the vicinity of such plants. I would like to describe briefly some of the steps that OSHA has taken in response to the tragic incident at Bhopal. The Agency has now inspected every facility in the country where methyl isocyanate (MIC) is either produced or used in significant quantities. These inspections took place at the sole manufacturer of MIC in the United States, Union Carbide of Institute, West Virginia, and at the other four major users of the chemical: Union Carbide, Woodbine, Georgia; FMC, Middleport, New York; Morton Chemical Company, Weeks Island, Louisiana; and E.I. duPont de Nemours, LaPorte, Texas. These investigations were conducted by highly qualified OSHA officials, including safety specialists and industrial hygienists from OSHA Area and Regional Offices, members of the Agency's Health Response Team, OSHA Area Directors, and, in the case of the Union Carbide plant in West Virginia, an OSHA Regional Administrator and the Agency's Director of Field Operations.

Great care and much time was expended on each of these inspections, which began early in December 1984. The inspections started in each case with an extensive review of relevant ments maintained by the employer. These included records of workplace injuries and illnesses; exposure records for MIC;

written emergency plans; written guidelines for use of personal protective equipment; MIC-process block diagrams; MIC hazard-information material--i.e., material safety data sheets; pertinent training documents; and job-safety analyses.

OSHA also reviewed the MIC-related processes involved at each workplace. As noted, the Union Carbide plant in West Virginia is the only plant that manufactures MIC. Because of the Bhopal disaster, all production of MIC had been discontinued at that plant prior to OSHA's inspection, and so the production could not be observed directly. The processes involved in that production, however, were studied thoroughly by OSHA.

(We are aware that Union Carbide has decided to resume production of MIC in a few months, and you may be assured that OSHA will be on hand at that time to monitor start-up operations.)

In this discussion, a distinction needs to be made between spills or leaks that occur in a plant's normal operations, such as routine maintenance and cleaning of valves and other equipment, and uncontrolled chemical reactions, which can present an immediate and catastrophic hazard that may affect the general public. Safety precautions for uncontrolled reactions are different from those taken in the event of a potential leak or spill in a plant's production or transfer process, to which relatively fewer people (generally only certain plant employees) are exposed. Furthermore, plant employees exposed to a leak or spill, are routinely trained in working with chemical hazards, provided with protective equipment, and informed about steps to be taken in the event of an exposure.

OSHA examined in great detail the control measures taken at the five facilities it investigated. For example, the compliance officers conducting the inspections looked at:

- the closed system for transfer of MIC from railcars to storage tanks and for transfer of MIC from storage tanks to a wholly enclosed process vessel.
- refrigerated storage tanks, in which MIC is covered with a nitrogen blanket and transferred by nitrogen pressure to prevent residual MIC contamination in the process lines.
- back-up storage tanks, which would be used in the event of an emergency to transfer MIC automatically from one tank to another.
- the heat-sink system which automatically adds coolant to dilute the MIC and reduce the temperature of the reaction.
- caustic neutralization tanks and back-up neutralization scrubbers to which MIC may be automatically transferred during a reaction.
- the personal protective equipment provided to employees involved in transfer of MIC.
- the automatic temperature-sensing devices which warn of possible reactions.
- pressure-relief devices on MIC-process tanks and on transfer lines--devices which were vented to scrubber systems to neutralize the chemical.

OSHA inspectors also checked to determine whether plant personnel, from top management to line employees, adhered to detailed, clearly established operating procedures for all MIC operations. Such standard operating procedures include proper safe-work practices, effective preventive-maintenance programs, employee-training in job hazards, and carefully prepared emergency response procedures to be followed should a reaction, leak or spill occur.

A complete report of these inspections has been prepared and will be provided to the Committee. Generally, the Agency found that industry practices to prevent, control, and neutralize an uncontrolled reaction were sufficient, in that they rely on the redundancy of safety systems (one backing up another, in turn backed up by a third and often a fourth system), and on professional maintenance systems. In two instances, however, OSHA has issued citations because, in its view, necessary back-up controls were not shown to be sufficient. As to spills and leaks in areas covered by the OSHA inspections, all companies had developed and implemented practices aimed at neutralizing MIC and preventing its passage into the ambient air. A few deficiencies regarding the adequacy of respirator usage and personal protective clothing were observed by OSHA during plant operations, and the Agency has issued appropriate citations alleging violations. After studying and analyzing the report on the causes of the Bhopal disaster, the agency will reexamine all its conclusions and plan for any necessary re-inspections that may prove warranted. We can say at this point that the necessary engineering control measures have

been identified to ensure that the possibility of a catastrophic release of MIC from an uncontrolled reaction is extremely remote.

Since its inception in 1971, OSHA has been working to reduce potential occupational exposures to hazardous spills or leaks inherent in the large-scale production of chemicals. The primary method of reducing employees' exposure to leaks and spills is to minimize their occurrence. This can be accomplished through employer awareness of leak potentials and the implementation of engineering controls. Secondary protective measures are also essential to assure employee protection in this industry. Such measures include effective preventive maintenance programs, work practice controls that emphasize safe procedures, employee education and training in the potential hazards of the job, and protective equipment necessary for both normal operations and emergencies. Of particular importance is the existence of carefully worked-out emergency procedures in which employees are carefully trained.

OSHA is addressing these problems, using the entire range of programs available under the Occupational Safety and Health Act. The Agency will continue to do so by enforcing its standards, offering consultative advice and other technical assistance, and promoting training, education and other voluntary programs. Our experience leads us to conclude that only a concerted effort involving the private sector as well as government can ensure that we are doing the best job possible to contain chemical hazards in the workplace.

TESTIMONY OF THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
SENATOR LAUTENBERG, HEARING CHAIRMAN
THE UNITED STATES SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE
AT NEW JERSEY INSTITUTE OF TECHNOLOGY, NEWARK
FEBRUARY 18, 1985

I. INTRODUCTION

Good morning, Senator Lautenberg and members of the Senate Environment & Public Works Committee. The New Jersey Department of Environmental Protection greatly appreciates the opportunity you have afforded us to testify at this hearing. At the outset, let me commend you for initiating the legislative inquiry about the issues posed by the emission of toxic air pollutants.

The release of highly toxic chemicals to the air is a severe concern in New Jersey, especially in view of its high population density and large, diverse chemical industry. The NJDEP agrees that improved chemical release prevention and response is necessary, based on recent chemical release incidents in New Jersey and the awareness brought about by the Bhopal, India tragedy that the consequences of chemical accidents can be catastrophic.

I must also compliment you, Senators, on the issues that you have raised by tying together emergency response, Right to Know, conventional air pollution enforcement, and public safety issues. You have framed the questions in a way that suggests the need for new and innovative legislation and regulatory action. Let me be a bit more specific. The questions before you today may be divided into four categories from a technical air pollution control viewpoint: firstly, there are the questions raised by the catastrophic incident that occurred in India; secondly, the less serious but more common incident of accidental releases of air contaminants that are typically experienced in industrialized areas of the country; third, there is the continuous emission of toxics during non-emergency circumstances; that is, the emission of toxic substances during normal plant operations; and finally, there is the more conventional but perhaps most important question of what is the environmental fate of the tons of toxic contaminants, the hydrocarbons and the volatile organic substances that are emitted on a routine basis from all forms of industry.

My testimony today will address primarily the first two questions, specifically the appropriate response to potential catastrophies like Bhopal and the emergency response enforcement and engineering safety issues associated with other types of releases. I suggest that you call on the United States Environmental Protection Agency Air Quality Program staff to address the issues presented by non-emergency releases. They are covered extensively by their programs to deal with hazardous air contaminants. New Jersey also has extensive programs in those areas and I would be happy to address them also, if you have questions in that regard.

Since October 1984, there have been at least 14 incidents of accidental release of chemicals in the air in the Newark to Woodbridge, New Jersey

region. Some of these incidents have resulted in widespread (beyond-the-property-line) air pollution, causing odors, eye tearing, and other adverse effects. In some cases there have been repeated incidents at the same plants. The NJDEP will submit a summary of the incidents and the NJDEP's enforcement responses for the record. Our responses have included fines and orders to conduct comprehensive evaluations of the risk of accidental chemical release to be followed up by remedial measures. Later in this testimony I will discuss the orders for evaluation of accidental chemical releases in detail.

The cause for dramatic increase in chemical releases to the atmosphere in this industrial area is not apparent. Poor housekeeping, insufficient training, and failure to maintain old equipment are all suspect.

Chronologically, in the midst of the unprecedented number of chemical releases in New Jersey, the Bhopal, India tragedy occurred on December 3, 1984. Of the 14 cited incidents since October 1984, eight happened before Bhopal and six thereafter. Responsible public officials must ask themselves, can such an incident happen in the United States.

In New Jersey the DEP response to the Bhopal tragedy included an effort to identify chemicals similar to Methyl Isocyanate (MIC) and circumstances which might result in substantial risk to the public. This effort is in addition to the ongoing enforcement actions to reduce the frequency of chemical accidents.

Before I discuss the details of the Department's search for toxic chemicals similar to MIC, I would like to stress that the most critical issue for you to consider is how to prevent the accidental release of large quantities of such chemicals. While New Jersey has a fairly extensive emergency response capability, no one can or should rely on after-the-accident emergency response and threats of fines to protect the public.

It seems apparent from the Bhopal incident descriptions that the best off-site emergency response available probably would not have saved those persons close to the plant. The quantity of toxic chemical released in a relatively short time period, immediately adjacent to a densely populated area, probably did not allow enough time to save many of those who died, even if an off-site evacuation had been implemented as quickly as possible. Therefore, it is necessary that releases of large quantities of highly toxic chemicals be prevented in the first place. This is an obvious, but not an easily implementable goal.

In the United States, we have tens of thousands of chemicals in use in our society. Which do we evaluate for risk of accidental releases? Do any of these present a risk of the same order of magnitude as the 15,000 gallon storage tank of MIC in India? How do we prevent such an incident, if we find similar circumstances here?

DEP has begun to look for answers to these questions. We have learned that these are not easily answered, and we don't have pat answers. However, I believe we have made some progess and would like to share that today.

II. NJDEP'S SEARCH FOR LIFE THREATENING TOXIC CHEMICALS

A. Methyl Isocyanate (MIC)

The obvious first response to Bhopal, India was to determine if MIC was stored and used in New Jersey. Based on review of the data bases available to the Department, and follow up contacts with industry, we determined that MIC is used only in one pilot plant operation and some laboratories in New Jersey. The quantities involved do not present a danger off the property of the facilities. Data bases checked include:

1. the air pollution enforcement data system;

2. the industrial survey; and

3. hazardous waste manifests.

I would like to point out that while these data bases provide better information on industrial chemical use than those available to most other states, more and better data is needed. Our task to evaluate the risk of chemical facilities would be much easier and more quickly accomplished if New Jersey's Right to Know legislation was now in effect for manufacturing operations. I will discuss this issue also in more detail later.

B. Other Chemicals Similar to MIC

Having determined that MIC use is not an issue in New Jersey, the next step was to determine if similar chemicals are present in large quantities in New Jersey. Given the extent and diversity of New Jersey's chemical industry, the answer to this question might seem to be yes, and one would think that there would be many such chemicals.

However, upon closer evaluation it appears that few chemicals have properties similar to MIC.

While the exact details of the methyl isocyanate (MIC) accident in India are not fully known, it can be assumed that the unusual combined properties of the substance were factors. Those properties are its extremely high toxicity, low boiling point (102°F), and relatively high reactivity. (MIC reacts with water and many other substances.)

Also, there were other circumstances that made Bhopal extremely hazardous. MIC was stored and used in relatively large quantities

at this location. A large quantity of MIC was stored in a single tank (15,000 gallon tank, 45 tons of MIC). Finally, there was a large population at the plant boundary line. Consequently, the Department's evaluation of chemicals concentrated on toxicity, volatility (boiling point), reactivity, and usage in New Jersey.

Criteria developed by the Department to focus on chemicals of most concern if there is an accidental release are as follows:

1. Toxicity - DEP used a TLV 50 times higher (1 ppm) than the TLV for MIC (0.02 ppm). TLV's are threshold limit values for protection of workers, not an indication of life threatening concentrations. The use of TLV's to rank acute chemical toxicity is common.

2. Boiling point - The Department used boiling points below 200° as a screening criteria. This is conservative compared to MIC's 102°F boiling point. The lower the boiling point, the more potential to vaporize and be released as a gas if heated.

3. Reactivity - The Department included any chemical which has tendency to react with impurities and generate heat. MIC reacts with water and other substances.

4. Use - The Department initially focused on chemicals used in relatively large quantities in New Jersey. This is one area in which we have had difficulty obtaining good data from our existing data bases. The Department now intends to focus on specific companies with storage tanks which exceed a selected size, probably tanks with greater than one ton capacity.

These criteria should be considered preliminary at this time. We believe they provide a logical first cut to evaluate the chemicals of greatest concern. We encourage comments on these criteria and expect that they will be refined, as we proceed with our detailed evaluations.

These four criteria were used to screen all chemicals for which there is a published workplace threshold limit value. The key results of that screening are as follows:

1. No chemical has been identified with a combination of properties as problematic as MIC.

2. Six chemicals have been identified which, while not as serious a risk as MIC, deserve more detailed evaluation.
   Bromine
   Phosgene
   Phosphorous Trichloride
   Ethyl Mercaptan

Allyl Chloride
Chlorine

The Department is initially focusing on these chemicals. Depending on evaluation of additional data on chemical storage, the Department may expand the list of chemicals to be evaluated.

Using the Air Pollution Enforcement Data System and air pollution control permit files, the Department has so far identified about 25 companies which use these chemicals, and appear to do so in significant quantities (over 100 tons per year). Cross checking with other data bases and with industry is now necessary to obtain a full inventory for these chemicals.

In the meantime, the Department has begun to conduct inspections of the identified 25 plants to determine the following:

1. exact quantities of chemical stored and processed;

2. safeguards on the equipment;

3. condition of equipment;

4. emergency response procedures; and

5. notification procedures.

The results of the initial inspections will be used to:

1. identify obvious problems (none identified to date);

2. provide data for worst case accident analysis (including emission rate estimation, dispersion modelling, and off-property-line risk assessment);

3. provide information for developing procedures for more detailed inspections; and

4. identify state-of-the-art industrial safeguards. (Ciba Geigy, for example, has impressive safeguards on its phosgene operation.)

I would like to point out that all chemical companies are routinely inspected by the Office of Air Pollution Control Enforcement and other personnel from the Department. However, before October 1984, inspections primarily focused on normal releases of air contaminants to determine compliance with extensive and stringent air pollution codes governing such releases. Inspections had not focused on the possibility of accidental release of entire storage tanks or process vessels. With the incidents in New Jersey and Bophal, it is apparent that

the "rupture disk" type release must be given more attention by companies and regulatory agencies.

There are, in fact, things which can be done to prevent or reduce the environmental effects of rupture disk type releases.

1. Smaller storage tanks would result in less loss at one time.

2. Control devices after the rupture disks can reduce emissions to the air. These include scrubbers, flares, and expansion tanks. (Of course, these must be operational.)

3. Better training of operators and maintenance of equipment would reduce the possibility of runaway reactions.

I will summarize what the Department has learned thus far in its evaluation of the potential for accidental chemical releases, before discussing specific enforcement actions, emergency response preparedness, and right to know legislation.

1. Life-threatening risks equivalent to the MIC risk are not likely to be found.

2. Chemicals which present substantial risk from accidental releases are likely to be few in number.

3. There are logical means available to reduce the risk of such chemicals.

4. The effort to identify and comprehensively evaluate such chemicals and implement better safeguards will probably be substantial, but manageable.

III. NJDEP ENFORCEMENT ACTIONS

I previously mentioned that there was an unacceptable number of chemical release incidents over the last four months, especially in October and November of 1984. These incidents emphasized two enforcement problems, which have since been resolved by legislation in New Jersey.

Firstly, the maximum air pollution fine for each violation of the air pollution code was $2,500, which was not a sufficient deterent. Secondly, companies were not notifying the DEP of accidents, in some cases, even substantial accidents which caused widespread odor complaints. In one case, the Department received its first notification from New York officials of a large release of odorous chemicals.

On January 22, 1985, Governor Kean signed into law S-2480 which raises the maximum penalty to $10,000 for the first violation, $25,000 for the second, and $50,000 for the third and each violation thereafter. This law

also requires immediate notification of the DEP of accidental releases of chemicals to the air and empowers the DEP to adopt notification regulations. This compliments previously existing law requiring notification on all spills on land or into water.

Also, in response to the October and November 1984 incidents, Commissioner Robert E. Hughey took the unprecedented step of calling the executives and plant managers of about 40 major industries in the Union County/Middlesex area to Trenton in early December 1984. At this meeting, Commissioner Hughey explained the Department's support of increased fines and mandatory notification legislation. He also requested that they take a hard look at their plants and take appropriate actions to prevent further accidental releases to the atmosphere.

When repeat incidents occurred in January 1985, Commissioner Hughey ordered American Cyanamid and DuPont to conduct "environmental accident risk assessments" for their Linden plants. I am submitting copies of these orders for the record, and will summarize the key provisions now.

1. Each company must submit a detailed workplan prepared by independent consultants, outlining a plan to assess the potential environmental risks from accidental releases of chemicals into the environment.

2. The workplans must address evaluations of equipment used for chemical use, storage, handling, and disposal at the Linden facilities.

3. The work plans must address equipment design, operating procedures, preventive maintenance procedures, emergency response capability, and procedures for prevention and control of accidental release of chemicals.

4. The Department will review the workplans and may require modifications before approval.

5. The Companies must undertake the studies by the independent consultants and submit a remedial action plan within 60 days of workplan approval.

6. The remedial action plans shall include time schedules and engineering designs.

7. The Department will review and may require modification of the remedial action plans.

8. Upon DEP approval, the remedial action plan shall be implemented in accordance with the time schedule.

9. Detailed progress reports will be due each month.

In addition to ordering these two companies to conduct environmental accident risk assessments, Commissioner Hughey also recommended that 36 other companies in the area voluntarily undertake similar assessments.

With the precedents set in the orders issued to American Cyanamid and DuPont, the enforcement actions taken against them and other companies, the ability to levy more significant fines, and the mandatory reporting requirement, New Jersey has shown that meaningful action can be taken in response to accidental chemical releases. I would like to point out that there will be a strong tendency by the Department to penalize companies for most accidental releases, because we believe that most are preventable. The Department decided not to take enforcement action in only one of the incidents. A power failure which caused that incident was beyond the control of the company, and the company notified the Department immediately, voluntarily notified the citizens affected, and provided for cleanup.

I must stress that this type of preventive action is the real key to public health protection in this area. Once a release occurs, in most cases, it is over quickly and no emergency response program--no matter how sophisticated--can prevent public exposure to whatever was released.

As a result, the Department will be stressing this need with the state's industry in legislative hearings in the area. Moreover, we are not limited to fines and orders for remedial action. If the circumstances so warrant, the Department has the power to seek an injunction to shut an operation down, and will not hesitate to use that authority should we discover a potential life endangering situation or repeated violation of the air pollution control statute.

IV. EMERGENCY RESPONSE PREPAREDNESS

In the area of preparing for emergency responses to hazardous materials incidents, New Jersey has been a leader. Our emergency response efforts have been compared to the quality of the federal government's best resources. The emergency response efforts have been established as an organizational function of the Department's Commissioner's staff.

The Department maintains a fully manned emergency communications center on a 24-hour basis. We receive more than 17,000 reports and inquiries from the public each year. Our environmental hotline, for citizens and emergency notifications, provides statewide service to the public. To augment this activity, divisions having day-to-day functions in the management and enforcement of hazardous materials and related activities have established regional field offices and maintained rosters and emergency call-out lists to rapidly and effectively dispatch knowledgable responders to the emergency scene anywhere in the State.

All of our divisions have solicited the best of their technical and tactical personnel to form the Department's Emergency Response Team. This Emergency Response Team is composed of chemists, physicists, biologists, hydrologists and experts from almost every field of environmental science.

They have been trained in emergency response activities in such varied fields as sampling, plume dispersion, respiratory protection, protective clothing, state and federal laws and the list goes on and on. It is important to point out that everyone of these emergency responders have volunteered to be a member of this team. This speaks well of the professional attitude of the Department. I feel it also important to point out that many of these team members have volunteered their free time in presenting hazardous materials and emergency response related courses to the public and private sector. The Emergency Response Team, under the leadership of the Commissioner's Office of Emergency Response Preparedness, has developed the capability to effectively respond to any type of environmental emergency, assess the hazard, advise public officials and administer laws to protect the public.

The Department has created an ever improving and fairly sophisticated emergency response plan and emergency communications system. Each Division within the Department has identified and equipped emergency response personnel in activities such as spill response, water sampling, air analysis, and nuclear emergency response. As you may know, New Jersey was the first state in the nation to write a radiation emergency response plan. With the combined efforts of the New Jersey State Police, our Department has continually improved this Plan. As a result, it continues to attract attention for use as a model by federal agencies as well as agencies from other states. This effort, however, could not have been effected without two major ingredients:

1. Legislation - Radiation Response Act of New Jersey, A-966, Stewart-Herman Bill

2. A viable and dedicated funding source to provide for the provision of the plan, training of personnel and purchasing of equipment.

In addition, the Department of Environmental Proteciton has begun to address the county needs for hazardous materials response through the New Jersey County Environmental Health Act. Under this program, county and regional health offices are eligible to receive grants to parallel state activities in the area of hazardous waste, air pollution, safe drinking water, etc.

For the first time in 1984, State funding was provided to support and encourage the growth of these county health agencies. It is important to note that, despite the relative infancy of this program on a statewide basis, the County Environmental Health Agency that covers our most problematic area has a very sophisticated program. The Middlesex County Health Department (a regional health program) has developed their own hazardous materials response unit. This unit has been fully included in the Department's Emergency Response program and handles a great deal of the emergency response effort in their territory, which includes Linden in Union County. New Jersey encourages and supports this county and regional effort. In fact, in addition to the Middlesex Agreement under the County Environmental Health Act, the Department has recently executed Agreements with Atlantic, Burlington, Hudson and Passaic Counties for emergency

response activities. We expect programs in those counties (some already affected) to support and greatly augment our state-wide efforts in this area.

In the area of intergovernmental agreements, the Department works closely with the United States Coast Guard and the United States Environmental Protection Agency as the major federal coordinators for all large hazardous materials emergencies. The recent Malathion incident at American Cyanamid last year is a classic example of state and federal cooperative efforts. This interaction between the state, county and federal agencies is a result of numerous meetings and agreements. Just last week, for example, both the New Jersey State Police and the Department met with the United States Coast Guard, representatives from New York State, the United States Environmental Protection Agency, and other federal and state agencies. The conference was to identify the roles, resources and interagency functions of each organization in the preparedness for a response to a Bhopal-type accident in New Jersey. Going one step further, an agreement was made for a federally-sponsored "table-top" exercise simulating a hazardous materials release in this industrial region of the state.

The Department of Environmental Protection, in concert with the New Jersey State Police, Office of Emergency Management, has discussed conducting a full-scale test exercise (involving local resources) for the Tremley Point region. This exercise has been proposed to match the elaborate and well-versed professional response requirements of one of our annual nuclear test drills that, as you know, is conducted every year at each nuclear facility under the critical scrutiny of federal inspectors. It is my believe that this drill will bring about a much better understanding of community emergency preparedness.

Furthermore, the Department recently filed an application with the Federal Emergency Management Agency (FEMA) through the New Jersey State Police to identify hazard mitigation problems in our state. The original call for proposals only dealt with natural disasters such as floods, storms, beach disorders, etc. The Department is, nevertheless, pursuing that proposal to solicit FEMA support for identification of hazardous materials and other non-natural disasters.

It may also be logical to extend the existing civil defense program under FEMA to major chemical disasters. Plans are now in place for responding to natural disasters and nuclear emergencies. Even though these plans are not designed specifically for chemical releases, they can provide the needed response if evacuation is necessary. A chemical emergency, although not as widespread a problem as some potential nuclear emergencies, requires similar dispersion modelling, groundlevel concentration determination, and evacuation decisions.

Consequently, the Federal Emergency Management Agency should be directed by Congress to plan for and respond to major chemical emergencies. We believe that an accident like Bhopal is extremely unlikely in New Jersey. However, the emergency response capability should be in place where needed.

Also, the chemical plants for which such planning is appropriate are likely to be few in number, perhaps only a few in the USA. Here again the task appears to be manageable and the framework for implementation already exists in FEMA.

V. RIGHT TO KNOW

The Department is committed to strong, comprehensive Right to Know legislation. This legislation is needed so that community residents and emergency response personnel have access to vital information. But just as critically, the Department feels this information is essential to developing a data base so that we can track the use and fate of toxic substances in the state. Information collected by the Industrial Survey during 1978-79 provided information leading to the identification of numerous abandoned hazardous waste sites, many of which are now on the Superfund list. The Industrial Survey has also served the Department in numerous enforcement activities, and formed the basis of DEP's dioxin investigations.

The community provisions of New Jersey's Right to Know Law were based upon the Industrial Survey. Therefore, the Department wants to ensure that comprehensive Right to Know legislation is maintained in New Jersey and we have been working closely both with attorneys appealing the court case and with the legislative staff drafting a new state community Right to Know bill. We support any federal effort which will aid us in ensuring a strong Right to Know on the State level. We urge Congress if it considers federal community Right to Know legislation to:

1. ensure stringent enforcement measures;
2. stipulate that states can levy fees to support such programs;
3. enable state agencies to develop a centralized data base for toxics information; and
4. place the burden of proof for trade secret claims on the employer with clear criteria which must be addressed in order for trade secret claims to be valid.

In terms of amending the federal Occupational Safety and Health Act (OSHA), the issue is not merely allowing states to develop more stringent standards than OSHA. States must also be permitted to take over OSHA functions for single issues, such as Right to Know, or the whole concept of OSHA approval of state plans must be revised.

Finally, I want to stress once again that the Department is committed to any course of action which will give us the ability to implement a strong Right to Know program. However, indications are that submitting our State Right to Know Law to the Occupational Safety and Health Administration will not yield that result. Since issuing the federal hazardous communication standard, OSHA officials have indicated that a plan limited to a Right to Know Law is unlikely to be approved. At this time, the Department is concentrating our efforts on developing new State legislation and continuing legal action to obtain a comprehensive Right to Know law to protect the health of New Jersey citizens.

VI. RECOMMENDATIONS SUMMARY

Our primary recommendation is that actions be taken to prevent releases of large quantities of certain highly toxic chemicals. The following comprehensive actions must be directed at the few chemicals which truely need additional regulation and control, rather than at all chemicals.

1. Congress should direct EPA to develop national selection criteria to identify the probably small number of chemicals and situations with significant off property line life threatening risk resulting from a major accident. New Jersey's preliminary criteria of toxicity, reactivity, boiling point, and storage quantity would be a good starting point.

2. If necessary, legislation should be adopted to clarify the roles of EPA and OSHA in preventing chemical accidents and to provide additional authority and direction to these agencies.

3. EPA should be directed to develop an inspection and permitting program for preventing accidental releases of the identified chemicals. Such programs should track the selected chemicals throughout the plants, and should include transportation from and to the plants.

4. Environmental accident prevention plans should be required and implemented for the few chemical storage and use situations which meet the established significant risk criteria. These plans might include:

   a. Minimum equipment safeguards
   b. Maximum storage quantities
   c. Evaluation of worse case accident senarios, including dispersion modelling to determine off property line concentrations.
   d. Minimum distances to populated areas
   e. Maintenance procedures
   f. Training procedures
   g. Operating procedures
   h. Emergency response procedures
   i. Notification procedures
   j. Drill requirements
   k. Inspection requirements

5. FEMA should be directed to coordinate a national emergency response program for potential major toxic chemical release.

6. Federal right to know legislation should be amended to allow States to implement right to know programs which are more stringent than minimum federal criteria.

7. Funding should be provided to the states to implement environmental accident prevention programs, improve emergency preparedness and implement right to know programs.

Thank you for this opportunity to present these findings and recommendations. Additional detail will be provided in writing.

STATEMENT: [illegible]
[illegible]
[illegible]

[illegible] IN BERGEN COUNTY

Of 70 towns in Bergen County, roughly 1-15 have operational disaster plans as stated by the Bergen County Office of Emergency Management.

The County itself is involved in developing a plan, but that plan as yet is incomplete. Should a serious emergency develop within the County, we could not expect an organized, cohesive response from the emergency service sector. Each agency has a plan of its own and each hospital has a plan but they are not interrelated with each other by way of communication or coordination.

There seems to be a number of reasons that go beyond the existing apathy. These would include the following:

The increase in hazzard potential grew almost unnoticed. Hazzard potential such as:

a. larger amounts of chemicals being used in industry therefore causing our highways and railroads to inundate with hazzardous materials
b. transportation of radio active materials
c. dumping and contamination
d. aging of some of our chemical plants
e. growth in the number of industrial complexes
f. growth in the number of residential communities
g. increase in air traffic in three area airports, (LaGuardia, Newark, and Teterboro).

WHAT MUST BE DONE

There is a need for educating and understanding of the Emergency Management Program on the part of government officials, and of our mayors in particular. A teamwork approach to disaster planning on the part of emergency services which would include:

1. Communicating with each other in the planning and executive levels.
2. Holding periodic drills so as to identify weakness.

We should have an information center on each hazzard incident so that we might identify what road, what chemical, what time of day, etc., causes us the highest potential. From this information, we may be able to mitigate future incidents.

Our political representatives that are involved with the environment on the various levels should interchange information and coordinate legislative programs wherever necessary and practical so as to maximize our legislative impact.

We should increase our training and equipment so that our responders, and particularly our first responders will be knowledgeable as to what they are dealing with and how to react.

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